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**APPLICATION
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SPECIFICATION**GAME MACHINE AND PROGRAM****5 FIELD OF THE INVENTION**

The present invention relates to a gaming machine and a program thereof.

RELATED ART

- 10 Conventionally, there has been a bingo game played with a bingo card having cells arranged thereon in a matrix form and allocated with various kinds of identification information, in the game, a cell having identification information selected by lottery is punched, and a player who can first punch and align any sequence of cells arranged in the vertical, horizontal, and diagonal directions
15 wins the game.

- The rule of the bingo game as described above is simple. However, unlike another game method, in which a game result is determined by only one lottery drawing, the bingo game provides such an effect that each player may become impatient because his/her bingo card is not immediately punched out
20 for the win or each player experiences a sense of anticipation that he/she would "win the game" because a sequence of cells is completed if the last one cell is punched. Therefore, many people are enjoying the game irrespective of age and sex.

- Bingo cards of paper are normally used in this bingo game. However,
25 various electrically-controlled gaming machines imitating this game have been developed as disclosed in Japanese Published Unexamined Patent Application No. 2001-161888, for example, and these gaming machines offer games

through which game players have such a realistic sensation wherein a lottery ball enters a lottery hole in front of their eyes, and thus the players' interest in the games can be perpetuated.

However, in such a gaming machine, after a lottery ball enters a lottery hole, the lottery ball must be withdrawn so that the withdrawn lottery ball can be thrown in again, and thus a withdrawing mechanism for withdrawing lottery balls, etc., hinder simplification of gaming machines. Furthermore, if means for solving this problems loses the realistic sensation, it would expose game performance which is familiar, but simple, and it is difficult to perpetuate the game players' interest in the games.

DISCLOSURE OF THE INVENTION

It is an object of the present invention to provide a gaming machine which is simplified without failing to provide realistic sensations of games.

More specifically, according to the present invention, the following is provided.

(1) A gaming machine comprising: a cabinet having a face portion on which a lottery ball can roll and a plurality of lottery holes provided on the face portion; game result determination means for determining a game result under a condition that the lottery ball enters any one of the plurality of lottery holes of the cabinet; a withdrawing passage being provided in the cabinet, the withdrawing passage being capable of allowing lottery balls having been discharged to pass through; lottery ball throwing means for allowing the lottery balls having been discharged from the plurality of lottery holes through the withdrawing passage to be thrown onto the face portion of the cabinet; and tilt control means for tilting the cabinet, wherein the cabinet is tilted by the tilt control means such that lottery balls having been located in the withdrawing passage are directed out to

the lottery ball throwing means.

According to the present invention, the cabinet is tilted, and the lottery balls located in the withdrawing passage are directed out to the lottery ball throwing means, so that the lottery balls can be withdrawn by tilting the cabinet and thus the gaming machine can be manufactured simply and at low cost. In particular, in a large-size gaming machine such as a bingo game or the like, it is required to further reduce the setup space of the gaming machine even if its reduction level is slight, and the present invention can further reduce the setup space. Furthermore, it is unnecessary to provide the lottery ball discharging means to each of the a plurality of lottery holes, and the gaming machine can be manufactured more simply at lower cost.

(2) The gaming machine according to (1), wherein the lottery ball throwing means comprises: feeding means for feeding lottery balls upward; and throw-in means for throwing the lottery balls having been fed by the feeding means downward onto the face portion, wherein the cabinet is tilted by the tilt control means such that the lottery balls located in the withdrawing passage are directed out to the feeding means.

According to the present invention, even in the gaming machine having the feeding means for feeding the lottery balls upward, the lottery balls in the withdrawing passage can be directed out to the feeding means without withdrawing the lottery balls, and thus the gaming machine can be manufactured simply and at low cost.

(3) The gaming machine according to (2), wherein the feeding means is disposed outside the cabinet, the feeding means having a function to feed the lottery balls as being visible from the outside.

According to the invention described above, lottery balls used in the game can be fed while being visibly recognized by game players. For example,

when trouble such as clogging of a lottery ball or the like occurs, it can be easily visually recognized whether predetermined lottery balls have been accumulated, and the maintenance performance can be enhanced.

- (4) The gaming machine according to (2) or (3), further comprising:
- 5 detecting means for detecting a number of the lottery balls having been directed out from the withdrawing passage to the lottery ball throwing means; wherein the tilt control means has a function to stop tilting the cabinet, under a condition that the detecting means detects that the number of the lottery balls having been directed out, as the cabinet is tilted, from the withdrawing passage to the
- 10 lottery ball throwing means is a predetermined number.

According to the invention described above, when the game is finished, the cabinet is tilted to withdraw lottery balls, and when a predetermined number of lottery balls are directed out to the lottery ball throwing means, the tilt of the cabinet is stopped. Therefore, progress conditions of a game such as start of

15 the game, end of the game, etc., can be visually informed by tilting a cabinet in the form of a ship or the like.

- (5) A gaming machine comprising: a cabinet having a face portion on which a lottery ball rolls, and a plurality of lottery holes being provided on the face portion; game result determination means for determining a game result on
- 20 a basis of any one of a plurality of lottery holes receiving a lottery ball under a condition that the lottery ball enters said any one of the plural lottery holes; lottery ball discharging means for discharging outside lottery balls having entered a plurality of respective lottery holes; a withdrawing passage being fixed to the cabinet, the withdrawing passage allowing the lottery balls having been
- 25 discharged by the lottery ball discharging means to pass through; lottery ball accumulating means for accumulating the lottery balls having been discharged by the lottery ball discharging means through the withdrawing passage, the

lottery ball accumulating means communicating with the withdrawing passage;
an open/close gate being provided between the withdrawing passage and the
lottery ball accumulating means such that the open/close gate is opened/closed;
gate control means for controlling the open/close operation of the open/close
5 gate; lottery ball throwing means for throwing each of the lottery balls having
been accumulated by the lottery ball accumulating means onto the face portion
of the cabinet; and tilt control means for tilting the cabinet, wherein the cabinet
is tilted by the tilt control means such that the open/close gate is positioned on a
lower side of the withdrawing passage, and the open/close gate is opened by
10 the gate control means so that lottery balls located in the withdrawing passage
are directed out to the lottery ball accumulating means.

According to the invention described above, it is unnecessary to provide
specific various kinds of withdrawing devices such as a suction device, etc., and
the lottery balls can be withdrawn by merely tilting the cabinet. Therefore, the
15 gaming machine can be manufactured simply at low cost. In particular, in a
large-size gaming machine such as a bingo game or the like, it is required to
reduce the setup space of the gaming machine even if its reducing level is small,
and the setup space can be further reduced by the present invention.
Furthermore, it is unnecessary to provide the lottery ball discharging means for
20 each of the a plurality of lottery holes, and thus the gaming machine can be
manufactured more simply at lower cost.

(6) The gaming machine according to (4), further comprising: passage
detecting means for detecting a number of lottery balls passing through the
open/close gate, wherein the gate control means has a control function to close
25 the open/close gate if a number of lottery balls having passed through the
open/close gate reaches a predetermined number from when the open/close
gate is opened.

According to the invention described above, it is detected that a predetermined number of lottery balls are directed out, and thus the probability of leading out the lottery balls is increased. Furthermore, even when various troubles such as clogging of lottery balls, insufficiency of lottery balls, etc., occur, it is possible to provide informing means for informing these situations, and thus a countermeasure can be taken, even if the predetermined number of the lottery balls are directed out. Of course, extra lottery balls exceeding the predetermined number can be prevented from being directed out, and it is unnecessary to count the number of lottery balls thrown by the lottery ball throwing means.

(7) The gaming machine according to (4) or (5), wherein the cabinet is designed in a ship-shape.

According to the invention described above, there can be provided such a game wherein not only is the sense of discomfort which effects game players due to the tilting motion of the cabinet attenuated, but also the enjoyment of the game players, as an added value of attractiveness to the game can be perpetuated.

(8) A program for a gaming machine comprising: a cabinet having a face portion on which a lottery ball rolls and a plurality of lottery holes provided on the face portion; lottery ball discharging means for discharging lottery balls having entered the plurality of respective lottery holes; lottery ball accumulating means for accumulating lottery balls through a withdrawing passage being fixed to the cabinet, the withdrawing passage being capable of allowing the lottery balls having been discharged by the lottery ball discharging means to pass through; lottery ball throwing means for throwing the lottery balls having been accumulated by the lottery ball accumulating means onto the face portion of the cabinet; and an open/close gate being provided between the withdrawing

passage and the lottery ball accumulating means as being freely opened or closed, wherein the program executes: a game result determination step of determining a game result on a basis of any one of the plurality of lottery holes receiving a lottery ball under a condition that the lottery ball enters any one of
5 the plurality of lottery holes; a lottery ball discharging step of controlling the lottery ball discharging means to discharge the lottery balls having entered the plurality of respective lottery holes; a tilt control step of controlling tilting of the cabinet so that the open/close gate is positioned at a lower side of the withdrawing passage; and a gate control step for controlling an open/close
10 operation of the open/close gate, wherein the cabinet is tilted such that the open/close gate is positioned on a lower side of the withdrawing passage in the tilt control step, and the open/close gate is opened in the gate control step such that the lottery balls located in the withdrawing passage are directed out to the lottery ball accumulating means.

15 According to the invention described above, the lottery balls can be withdrawn by merely tilting the cabinet without equipping any withdrawing device such as a suction device or the like; and the gaming machine can be manufactured simply at low cost. In particular, in a large-size gaming machine such as a bingo game or the like, it is required to reduce the setup space of the
20 gaming machine even if its reducing level is small, and the setup space can be further reduced by the present invention. Furthermore, It is unnecessary to provide the lottery ball discharging means to each of the a plurality of lottery holes, and the gaming machine can be manufactured more simply at lower cost.

25 BRIEF DESCRIPTION OF THE DRAWINGS

Fig. 1 is a perspective view showing the general view of a gaming machine according to a preferred embodiment of the present invention.

Fig. 2 is a cross-sectional view showing a sailboat type lottery machine in the gaming machine of Fig. 1.

Fig. 3A is an enlarged view of the vicinity of the lottery board in the gaming machine of Fig. 1.

5 Fig. 3B is an enlarged view of the lottery board in the gaming machine of Fig. 1.

Fig. 3C is an enlarged cross-sectional view of a lottery hole in the gaming machine of Fig. 1.

10 Fig. 4A is a plan view showing the vicinity of a lottery ball receiving portion in the gaming machine of Fig. 1.

Fig. 4B is a plan view showing the vicinity of the lottery ball receiving portion in the gaming machine of Fig. 1.

Fig. 5 is an enlarged view showing a part of a personal game operating unit in the gaming machine of Fig. 1.

15 Fig. 6 is a block diagram showing a circuit construction containing a main control circuit for controlling the gaming machine of Fig. 1 and a peripheral device electrically connected to the main control circuit.

Fig. 7 shows a data sheet for associating codes used in the gaming machine of Fig. 1 with symbols.

20 Fig. 8 is a block diagram showing a display device of the gaming machine of Fig. 1.

Fig. 9 is a diagram showing a screen display example of the gaming machine of Fig. 1.

25 Fig. 10 is a diagram showing a screen display example of the gaming machine of Fig. 1.

Fig. 11 is a flowchart showing a control processing example which can be executed in the gaming machine of Fig. 1.

Fig. 12 is a flowchart showing a control processing example which can be executed in the gaming machine of Fig. 1.

Fig. 13 is a flowchart showing a control processing example which can be executed in the gaming machine of Fig. 1.

5 Fig. 14 is a flowchart showing a control processing example which can be executed in the gaming machine of Fig. 1.

Fig. 15 is a flowchart showing a control processing example which can be executed in the gaming machine of Fig. 1.

10 Fig. 16 is a flowchart showing a control processing example which can be executed in the gaming machine of Fig. 1.

Fig. 17A is an enlarged view showing a lottery ball waiting portion of the gaming machine of Fig. 1.

Fig. 17B is an enlarged view showing the lottery ball waiting portion of the gaming machine of Fig. 1.

15 Fig. 17C is an enlarged view showing the lottery ball waiting portion of the gaming machine of Fig. 1.

Fig. 17D is an enlarged view showing the lottery ball waiting portion of the gaming machine of Fig. 1.

20 Fig. 17E is an enlarged view showing the lottery ball waiting portion of the gaming machine of Fig. 1.

Fig. 17F is an enlarged view showing the lottery ball waiting portion of the gaming machine of Fig. 1.

Fig. 17G is an enlarged view showing the lottery ball waiting portion of the gaming machine of Fig. 1.

25 Fig. 17H is an enlarged view showing the lottery ball waiting portion of the gaming machine of Fig. 1.

Fig. 17I is an enlarged view showing the lottery ball waiting portion of

the gaming machine of Fig. 1.

Fig. 18 is a perspective view showing the general view of a gaming machine according to a preferred embodiment of the present invention.

Fig. 19 is a longitudinally-sectional view showing the general view of a lottery machine of the gaming machine shown in Fig. 18.

Fig. 20 is a top view of a lottery ball receiving portion of the gaming machine of Fig. 18.

Fig. 21 is a top view showing the lottery machine of the gaming machine of Fig. 18.

Fig. 22 is a perspective view showing a lottery board of the gaming machine of Fig. 18.

Fig. 23 is a top view showing the lottery board of the gaming machine.

Fig. 24A is a longitudinally-sectional view showing the general view of a second withdrawing passage in the gaming machine of Fig. 18.

Fig. 24B is a longitudinally-sectional view showing the general view of the second withdrawing passage of the gaming machine of Fig. 18.

Fig. 24C is a longitudinally-sectional view showing the general view of the second withdrawing passage of the gaming machine of Fig. 18.

Fig. 24D is a longitudinally-sectional view showing the general view of the second withdrawing passage of the gaming machine of Fig. 18.

Fig. 24E is a longitudinally-sectional view showing the general view of the second withdrawing passage of the gaming machine of Fig. 18.

Fig. 24F is a longitudinally-sectional view showing the general view of the second withdrawing passage of the gaming machine of Fig. 18.

Fig. 24G is a longitudinally-sectional view showing the general view of the second withdrawing passage of the gaming machine of Fig. 18.

Fig. 25 is a perspective view showing a gaming terminal of the gaming

machine of Fig. 18.

Fig. 26 is a block diagram showing a system construction constructed by the gaming machine of Fig. 18.

Fig. 27 is a block diagram showing a control circuit constructed by the
5 lottery machine of the gaming machine of Fig. 18.

Fig. 28 is a block diagram showing the control circuit constructed in the gaming terminal of the gaming machine of Fig. 18.

Fig. 29 shows an example of a standby screen of the gaming terminal which is displayed on the display screen of the gaming terminal of the gaming
10 machine of Fig. 18.

Fig. 30 shows an example of a standby screen of the gaming terminal which is displayed on the display screen of the gaming terminal of the gaming machine of Fig. 18.

Fig. 31 shows an example of a standby screen of the gaming terminal
15 which is displayed on the display screen of the gaming terminal of the gaming machine of Fig. 18.

Fig. 32A shows an example of transition of a display frame of a REACH status individual display which is displayed on the display screen of the gaming terminal of the gaming machine of Fig. 18.

Fig. 32B shows an example of transition of a display frame of a REACH status individual display which is displayed on the display screen of the gaming
20 terminal of the gaming machine of Fig. 18.

Fig. 32C shows an example of transition of the display frame of the REACH status individual display which is displayed on the display screen of the
25 gaming terminal of the gaming machine of Fig. 18.

Fig. 32D shows an example of transition of the display frame of the REACH status individual display which is displayed on the display screen of the

gaming terminal of the gaming machine of Fig. 18.

Fig. 33 shows an example of the display frame of a double up game of the gaming terminal which is displayed on the display screen of the gaming terminal of the gaming machine of Fig. 18.

5 Fig. 34 is a main flowchart showing the processing in the lottery machine of the gaming machine and the main control circuit of the gaming terminal in the gaming machine of Fig. 18.

Fig. 35 is a flowchart subsequent to Fig. 34.

10 Fig. 36 is a flowchart showing a bingo cell moving operation invalidation processing in the gaming machine of Fig. 18.

Fig. 37 is a flowcharting showing prize-winning determination processing in the gaming machine of Fig. 18.

Fig. 38 is a flowchart showing REACH determination processing in the gaming machine of Fig. 18.

15 Fig. 39 is a flowchart showing REACH cell informing start processing in the gaming machine of Fig. 18.

Fig. 40 is a flowchart showing game preparing processing in the gaming machine of Fig. 18.

20 DESCRIPTION OF THE PREFERRED EMBODIMENT

Preferred embodiments according to the present invention will be described hereunder with reference to the drawings. In these embodiments, a gaming machine of the present invention is applied to a bingo gaming machine.

[Construction of Gaming machine]

25 Fig. 1 schematically shows a gaming machine 10 according to this embodiment.

The gaming machine 10 is a gaming machine, with which a plurality of

people can play simultaneously, and it is provided with a sailboat type lottery machine 12 at the center thereof. A plurality of game operating units 14 for individuals are provided at both the starboard and portside of the sailboat constituting the sailboat type lottery machine 12. In the embodiment shown in Fig. 1, five personal game operating units 14a to 14j are provided on one side, and thus, ten personal game operating units 14a to 14j in total are provided on both sides. The personal game operating units 14f to 14h are not illustrated in Fig. 1.

<Construction of Sailboat type Lottery Machine>

Fig. 2 is a schematic cross-sectional view of the sailboat type lottery machine 12. The sailboat type lottery machine 12 will be described hereunder with reference to Figs. 1 and 2.

A lottery ball raising device 20 is provided at a stern portion 12a of the sailboat type lottery machine 12, and a spiral groove is provided to the lottery ball raising device 20 so as to have a radius of curvature which is slightly larger than the radius of a lottery ball 21. The lottery ball raising device 20 is rotated by a lottery ball raising motor 22 provided at the lower portion of the lottery ball raising device 20 to raise the lottery ball 21 along the groove.

The lottery ball 21 raised by the lottery ball raising device 20 is fed to a lottery ball standby portion 24 disposed at the upper portion of the sailboat type lottery machine 12. By opening a lottery gate 26 at a predetermined timing, the lottery ball 21 is fed out to the lottery portion of the sailboat type lottery machine 12 one by one.

The lottery ball 21 fed out from the lottery gate 26 rolls on an upper gutter 28, and when it reaches a drop hole 30 provided at the center portion of the upper gutter 28, it drops down to a steering-wheel type rotating device 32. A passage having a circumferential shape through which the lottery ball 21 can

pass is provided along the outer peripheral portion of the steering-wheel type rotating device 32, and at least one passage hole having a diameter slightly larger than the diameter of the lottery ball 21 is provided on the outer peripheral surface of the passage.

5 The lottery ball 21 dropping from the drop hole 30 is stopped at the upper portion of the steering-wheel type rotating device 32, and when the passage hole formed in the steering-wheel type rotating device 32 arrives at the stop position of the lottery ball 21 by rotation of the steering-wheel type rotating device 32, the lottery ball 21 passes through the passage hole and enters the
10 steering-wheel type rotating device 32. The lottery ball 21 entering the steering-wheel type rotating device 32 drops to the lower portion of the steering-wheel type rotating device 32, and when the passage hole is located at the lowermost position of the steering-wheel type rotating device by rotation of the steering-wheel type rotating device 32, the lottery ball 21 further drops from
15 the steering-wheel type rotating device 32.

A lottery ball receiving portion 34 is provided at the lower side of the steering-wheel type rotating device 32, and the lottery ball receiving portion 34 is provided with a plurality of slopes 36a to 36d for guiding the lottery ball 21 from the side portion of the lottery ball receiving portion 34 to any one of two
20 lottery boards 38 (38a and 38b) described below. The lottery ball 21 dropping to the lottery ball receiving portion 34 rolls toward any one of the plurality of slopes 36a to 36b, and is guided to the lottery board 38 while rolling on any one of the plurality of slopes 36a to 36d. Figs. 3A and 3B are enlarged views showing the vicinity of the lottery board 38.

25 Two lottery boards 38a and 38b are rotatably provided on the deck board of the sailboat type lottery machine 12.

Here, two slopes 36a and 36b are provided to one lottery board 38a.

These slopes 36a and 36b are designed so that the slope 36a allows the lottery ball 21 to roll clockwise with respect to the lottery board 38a and the slope 36b allows the lottery ball 21 to roll counterclockwise with respect to the lottery board 38a. Furthermore, two slopes 36c and 36d are provided to the other
5 lottery board 38b. These slopes 36c and 36d are designed so that the slope 36c allows the lottery ball 21 to roll clockwise with respect to the lottery board 38b and the slope 36d allows the lottery ball 21 to roll counterclockwise with respect to the lottery board 38b (see Figs. 4A and 4B).

Therefore, if the lottery ball 21 rolls while being guided along the slope
10 36a when the lottery board 38a is clockwise rotated, the traveling direction of the lottery ball 21 is coincident with the rotational direction of the lottery board 38a, and thus the lottery ball 21 can continuously roll without reducing the speed thereof. Therefore, it is difficult for a game player to predict the lottery hole which the lottery ball 21 will enter, and thus the player's sense of
15 anticipation can be maintained. However, when the lottery ball 21 rolls while guided along the slope 36b, the traveling direction of the lottery ball 21 and the rotational direction of the lottery board 38a are opposite to each other. At this time, the speed of the lottery ball 21 may be drastically reduced, and thus the lottery ball 21 may immediately enter a lottery hole. At this time, the player
20 cannot maintain his/her sense of anticipation.

Therefore, as shown in Figs. 4A and 4B, roll preventive valves 37a and 37b are provided to the lottery ball receiving portion 34 so that the lottery ball 21 can be prevented from rolling in the direction opposed to the rotational direction of the lottery board 38. Further, since it may be preferable in some cases that
25 the lottery ball 21 rolls in the direction opposed to the rotational direction of the lottery board 38, the rolling direction may be selected in various manners such as random selection, optional selection, lottery-based selection, etc.

For example, when the two lottery boards 38a and 38b are clockwise rotated, the two roll preventive valves 37a and 37b are located as shown in Fig. 4A, and the passages to the slopes 36a and 36c for the lottery ball 21 to roll out to move clockwise are opened while the passages to the slopes 36b and 36d for the lottery ball 21 to roll out to move counterclockwise are closed.

Conversely, when the two lottery boards 38a and 38b are counterclockwise rotated, the two roll preventive valves 37a and 37b are turned as shown in Fig. 4B so that the passages to the slopes 36a and 36c for the lottery ball 21 to roll out to move clockwise are closed while the passages to the slopes 36b and 36d for the lottery ball 21 to roll out to move counterclockwise are opened.

In another embodiment, the lottery ball 21 rolls in a state that the lottery boards 38a and 38b stay still, and when the lottery ball 21 passes over any one of the slopes 36a to 36d, the rolling out direction of the lottery ball 21 is detected by a sensor provided to the slope to determine the rotational direction of the lottery board 38a or 38b in conformity with the direction. Therefore, the rotational direction of the rotational board 38 and the rolling direction of the lottery ball 21 can be matched with each other.

In the above-described embodiment, the lottery ball 21 is provided to roll in conformity with the rotational direction of the lottery board 38. However, the present invention is not limited to this embodiment, and the lottery ball may roll in either direction.

Furthermore, in this embodiment, the lottery ball 21 is designed to make a rolling motion on any one of the two lottery boards 38a or 38b. However, the present invention is not limited to this, and the lottery ball 21 may be designed to make a rolling motion so as to trace a figure of eight.

As shown in Figs. 3A and 3B, each of the lottery boards 38a and 38b

are provided with a plurality of lottery holes 40. Each of the lottery holes 40 has a diameter slightly larger than the diameter of the lottery ball 21 (see Fig. 3C) so that the lottery ball 21 can enter the lottery hole. For example, the lottery ball 21 guided by the slope 36 rolls on the rotating lottery board 38a, and enters any one of the lottery holes 40. In this embodiment, each of the lottery boards 38a and 38b is provided with twenty six lottery holes 40.

Symbols are allocated to the lottery holes 40, and a ball entrance detecting sensor 42 (see Figs. 3C and 8) is provided to each of the plurality of lottery holes 40. When the lottery ball 21 enters any one of the lottery holes 40, the ball entrance detecting sensor 42 corresponding to the one of the plurality of lottery holes 40 detects the entrance of the lottery ball, whereby the symbol corresponding to the lottery hole is selected.

Furthermore, a shutter 43 (see Fig. 6) is provided to each of the lottery holes 40. When the ball entrance detecting sensor 42 detects the entrance of the lottery ball to the lottery hole 40, the shutter 43 is driven, and the lottery hole 40 is closed, whereby the lottery ball is prevented from entering the same lottery hole twice in one game.

Furthermore, in another embodiment, the shutter 43 is set in a closed state in advance, and also the surface of the shutter 43 is located to be lower than the surface of the lottery board 38a around the shutter 43. The lottery ball may be stopped while a part of the sphere of the lottery ball is exposed from the surface of the lottery board 38 when the lottery ball enters a lottery hole 40. In this case, people who watch a game condition around the gaming machine can easily recognize which symbol is selected. After all the lotteries are completed, the shutters 43 are driven and the lottery balls put in the lottery holes are withdrawn into the sailboat type lottery machine 12.

The lottery ball 21 entering any one of the plurality of lottery holes 40

drops into a lottery ball withdrawing passage 44 as shown in Fig. 2, so that it is withdrawn into the sailboat type lottery machine 12.

The sailboat type lottery machine 12 is provided with a swinging device 46, and it is swingable around a swinging shaft 48.

5 When the lottery ball 21 is withdrawn into the ship, the sailboat type lottery machine 12 is tilted by the driving of the swinging device 46 so that the front portion 12b of the ship body moves upward and the rear portion 12a of the ship moves downward, and the lottery balls 21 in the lottery ball withdrawing passage 44 are fed to the lottery ball standby portion 50 located at the lower
10 side of the rear portion of the ship.

 The lottery ball standby portion 50 (50a and 50b) is provided with a plurality of partition gates 52 (52a to 52c) for compartmentalizing the lottery balls 21 every number of lottery balls which are used in one game. In this embodiment, the number of lottery balls 21 to be used in one game is set to five,
15 and three partition gates are provided.

 As described above, under the state where the rear portion of the ship is moved downward as shown in Fig. 17A, the partition gate 52a located between the lottery ball standby portion 50 and the lottery ball raising device 20 is first opened, and lottery balls 21 located at the lottery ball standby portion 50a
20 which is located at the side of the lottery ball raising device 20 are fed to the lottery ball raising device 20. After all the lottery balls 21 are fed to the lottery ball raising device 20, the partition gate 52a is closed as shown in Fig 17C.

 Next, the partition gate 52b located between the lottery ball standby portion 50a and the lottery ball standby portion 50b located at the side of the
25 center of the ship is opened as shown in Fig. 17D, and the lottery balls 21 located at the lottery ball standby portion 50b are fed to the lottery standby portion 50a. After all the lottery balls 21 are fed, the partition gate 52b is

closed as shown in Fig. 17E.

Furthermore, the partition gate 52c located between the lottery ball standby portion 50b and the lottery ball withdrawing passage 44 is opened as shown in Fig. 17F, and the lottery balls 21 located in the lottery ball withdrawing
5 passage 44 are fed to the lottery ball standby portion 50b. After all the lottery balls 21 are fed, the partition gate 52c is closed as shown in Fig. 17G.

Through the above operation, a required number of lottery balls 21 can be easily moved only by swinging the sailboat type lottery machine 12 and open/close the plurality of partition gates 52a to 52c. When the rear side 12a
10 of the ship and the front side 12b of the ship are in a horizontal position as shown in Fig. 17H or when the ship body is tilted so that the front side 12b of the ship is moved downward and the rear side 12a of the ship is moved upward, a required number of lottery balls 21 can also be easily secured by the partition gates 52a to 52c.

15 In the above embodiment, the number of sets each of which contains lottery balls 21 used in one game is set to three. However, the present invention is not limited to this, and two sets of lottery balls 21 may be used. In this case, the lottery ball standby portion 50b and the partition gate 52 are unnecessary. Furthermore, four sets, five sets or more sets of lottery balls 21
20 may be used.

Furthermore, in the above embodiment, the lottery balls 21 in the lottery ball standby portion 50 are partitioned by a plurality of partition gates 52a to 52c every number of lottery balls 21 used in one game, however, the present invention is not limited to this. For example, the above embodiment may be
25 modified so that only one partition gate 52a is provided to the lottery ball standby portion 50, a ball detection sensor is provided in the vicinity of the partition gate 52a, and the partition gate 52a is closed at the point in time when

a predetermined number of lottery balls 21 pass through the partition gate 52a, whereby only the predetermined number of a lottery balls 21 can be discharged.

The gaming machine 10 may be provided with a plurality of illumination devices (not shown) to light up the sailboat type lottery machine 12 with various colors, and various representations can be performed in combination with the swing operation.

<Construction of Personal Game Operating Unit>

As shown in Fig. 1, a display device 70 is provided to the upper portion of each personal game operating unit 14. A matrix card for a bingo game which is allocated to each game player, other information or an optical game screen are displayed on the display device 70 so that the game player can visually recognize various kinds of information drawn on the display device and the game advances.

Furthermore, a camera (not shown) for picking up overall images of the lottery boards 38a and 38b is equipped to the sailboat type lottery machine 12 to display the pickup images on the display device 70, so that a game player located at a position where he/she cannot view any one of the lottery boards 38a and 38b is enabled to view the lottery board 38.

Furthermore, the display device 70 is equipped with a touch panel having a touch sensor 72 (see Fig. 6), and the display device 70 is touched by a game player to allow input or instruction of various data.

In this embodiment, various input operations can be carried out by the touch sensor 72. However, the present invention is not limited to the touch sensor, and a plurality of operating buttons may be provided to carry out various input operations.

Fig. 5 is an enlarged view showing a part of the personal game operating unit 14.

A substantially horizontal seat portion 74 is provided at the lower side of the display device 70, and two dials 76L and 76S are vertically stacked so as to be slightly shifted from the center to the left side. By using the dials 76L and 76S, a game player can carry out an operation which is difficult to be carried out
5 by merely pressing a normal operating button or touching a touch panel.

For example, in this embodiment, in a matrix card (see Fig. 9) for a bingo game displayed on the display device 70, it is possible that respective symbols drawn on the cells adjacent to the outer periphery of the matrix are shifted to the adjacent cells one by one. When the sequential shift as
10 described above is carried out by button operation, touch panel operation or the like, the operation must be repeated many times. However, by using an input device such as the dials 76L and 76S as described above, the sequential operation can be performed by only one motion. Therefore, the game player can easily carry out the operation.

15 Furthermore, the game player can very simply carry out the operation for analog motions such as a scrolling motion on a screen, movement of a pointer, etc.

A coin slot 78 for dropping a coin into the gaming machine 10 is provided at the right side of the dials 76S and 76S. When the game player
20 drops a coin into the coin slot 78, a coin sensor 80 (see Fig. 8) provided in the personal game operating unit 14 detects drop-in of a coin, so that the game can be started.

A coin payout port 82 (see Fig. 1) is provided at the lower side of the seat portion 74. When a payout operation is carried out on the touch panel by
25 the game player, the drop-in coin is paid out from the coin payout port 82.

[Construction of Controller of Gaming machine]

Fig. 6 is a block diagram showing a circuit construction containing a

main control circuit for controlling the gaming machine 10 and a peripheral device electrically connected to the main control circuit.

The coin sensor 80 is connected to an interface circuit group 102 of the main control circuit 100, and a detection signal thereof is converted to a predetermined signal by the interface circuit group 102 and then supplied to an input/output bus 104. The input/output bus 104 is designed so that a data signal or address signal is input to a central processing circuit (hereinafter referred to as CPU).

A touch sensor 72 is also connected to the interface circuit group 102 of the main control circuit 100. When the touch sensor 72 detects that a display position of a display content displayed on the display device 70 is touched by a game player, the touch sensor 72 supplies the signal corresponding to the indication content to the interface circuit group 102.

Furthermore, the dials 76L and 76S are connected to the interface circuit group 102. When the dial 76L or 76S is rotated by the game player, a signal corresponding to each rotational angle is supplied to the interface circuit group 102.

The ball entrance detecting sensors 42 are also connected to the interface circuit group 102 described above. When the ball entrance detecting sensor 42 detects that a lottery ball 21 enters the corresponding lottery hole 40, the ball entrance detecting sensor 42 supplies the corresponding signal to the interface circuit group 102.

ROM (read only memory) 108 and RAM (random access memory) 110 are connected to the input/output bus 104 described above. In ROM 108 is stored a control program for controlling the flow of the overall game in the gaming machine 10. Furthermore, in ROM 108 are stored initial data for executing the control program, a program for controlling the display operation of

the display device 70, etc. RAM 110 stores flags and values of variables used in the above program.

Furthermore, the input/output bus 104 is connected to the interface circuit group 112. A speaker 86 and a hopper 88 are connected to the
5 interface circuit group 112, and the interface circuit group 112 supplies driving signals and driving power to control the various devices described above on the basis of a processing result of CPU 106.

To the interface circuit group 112 are further connected the lottery ball raising motor 22, the lottery gate 26, the steering-wheel type rotating device 32,
10 the roll preventive valves 37a and 37b, the lottery boards 38a and 38b, the shutter 43, the swinging device 46 and the partition gates 52a to 52c. This connection arrangement enables the driving operation of the sailboat type lottery machine 12 as described above.

Furthermore, a display control device 200 is connected to the interface
15 circuit group 112, and generates a driving signal to drive the display device 70 connected thereto on the basis of an image display command output from the main control circuit 100.

[Internal Lottery Method]

In the processing of each game operating unit described later, an
20 internal lottery is carried out to prepare a matrix card. Through the internal lottery, random numbers are generated and internal lottery data are acquired on the basis of the random numbers.

With respect to the method of generating the random numbers in the internal lottery, any one of an external random number system and a software
25 random number system is used. According to the external random number system, random numbers are generated by an unit for generating random numbers such as a binary counter IC or the like which is provided on a

substrate separately from CPU. According to the software random number system, the CPU itself creates a counter, renews the numerical value of the counter according to a program stored in ROM and uses the numerical value as a random number.

5 In the gaming machine 10 of this embodiment, random numbers are generated by using the software random number system. The random number generating method of the gaming machine 10 according to the present invention is not limited to the software random number system, and the external random number system, a system for extracting a numerical value from a plurality of
10 numerical values without making the game player feel regularity or the like may be used.

A random number acquired by the lottery described above is converted to a symbol code by using a conversion table stored in ROM 108, and then the symbol code is recorded.

15 The symbol code is a code for identifying each of the cards of a card game (trump) which correspond to symbols used in the game of the present invention, and these symbol codes are classified as shown in Fig. 7, for example. CPU 106 identifies a mark of each symbol on the basis of an upper digit of the symbol code, and also identifies a numeral of the symbol on the
20 basis of a lower digit of the symbol code, thereby determining whether a combination of symbols on each line forms a winning combination.

[Construction of Display Control Device of Gaming machine]

Fig. 8 is a block diagram showing the circuit of the display control device 200 described above.

25 An interface circuit 202 is connected to an input/output terminal 204, and an image display command output from the main control circuit 100 described above is supplied to the input/output bus 204 through the interface

circuit 202. The input/output bus 204 is designed so that a data signal or address signal is input to CPU 206.

ROM 208 and RAM 210 are also connected to the input/output bus 204 described above. ROM 208 stores a display control program for generating a driving signal to be supplied to the display device 70 on the basis of an image display command output from the main control circuit 100. In RAM 210 are stored flags and values of variables used in the program.

Furthermore, an image data processor (hereinafter referred to as VDP) 212 is also connected to the input/output bus 204. VDP 212 is a processing device which includes circuits such as a so-called sprite circuit, a screen circuit, a palette circuit, etc., and can carry out various kinds of processing for displaying images on the display device 70.

To VDP 212 described above are connected video RAM 214 for storing image data corresponding to an image display command output from the main control circuit 100, image data of background, and image data ROM 216 for storing image data such as image data of figures, etc.

CPU 206 reads out and executes the display control program stored in ROM 208, and stores into RAM 214 image data to be displayed on the display device 70 in response to the image display command output from the main control circuit 100. The image display command output from the main control circuit 100 contains display commands such as a background display command, a figure display command, a character display command, etc.

The image data ROM 216 stores image data such as image data of figures corresponding to identification information images, character image data of characters such as moving bodies, etc., displayed as representation display frames, background image data constituting backgrounds for the display device 70, etc.

After respective image data described above are synthesized in VDP 212, the image data thus synthesized are transmitted to the driving circuit 218, and the driving circuit 218 drives the display device 70 to display images on the display device 70.

5 [Display Example of Image]

By recording the image data on the video RAM 214 as described above, the images are displayed on the display device 70, and the game advances. Display examples of images displayed in the game are shown in Figs. 9 and 10.

Fig. 9 shows a display example when a matrix card in a bingo game is
10 displayed on the display device 70. In the bingo game of this embodiment, numerals are not displayed, but figures of cards are displayed as symbols on the respective cells.

A symbol selected by a lottery is displayed at the center of the upper
side 90 of the display device 70. In the case of Fig. 9, "eight of spades" is
15 selected by a first lottery and "the king of diamonds" is selected by a second lottery.

Furthermore, winning combinations of a poker game and payouts
associated with the winning combinations are displayed at the left side 92 of the
screen of the display device 70. In the bingo game of this embodiment, not
20 only a payout is paid to a game player because a line of cards is completed as a result of lottery, but also a payout to be paid is increased according to a winning combination of the poker game when a combination of symbols on the completed line completes the winning combination of the poker game. Therefore, a game player aims to both complete a line of cards and complete a
25 winning combination of cards. Therefore, the game player aims to achieve a higher payout by moving cells in a trial-and-error style while manipulating the dials 76L and 76S.

Furthermore, various display frames such as an optional game, etc., as well as the bingo game can be displayed on the display device 70.

Fig. 10 shows a display example when a treasure hunt game is displayed as an optional game.

5 In this game, a game player scrolls the screen in the right-and-left direction by rotating the dial 76L, and also zooms in the screen by rotating the dial 76S. If the game player finds a treasure within the time and matches the treasure with the cursor located at the center of the screen, he/she can obtain a payout.

10 Analog input operations such as scroll, zoom-in, etc., are more appropriate for the game as described above than input operations such as a button pressing operation, etc., and thus such a game can be simply carried out by using an input device such as the dials 76L and 76S. This game may be carried out without using any lottery ball, and thus it may be set as a standby
15 screen when other game players execute a game using a lottery ball.

[Operation of Gaming machine]

Figs. 11 to 16 show subroutines for controlling the gaming machine 10 which are executed in the main control circuit 100. Subroutines shown in Figs. 11 and 12 are called at a predetermined timing from the main program of the
20 gaming machine 10 being executed in advance to be executed.

In the following description, It is assumed that the gaming machine 10 is started in advance, variables used in CPU 106 described above are initialized and the gaming machine is stationarily operated.

[Processing of Lottery Machine]

25 Fig. 11 shows a subroutine for controlling the processing executed in the sailboat type lottery machine 12.

First, rotation of the lottery boards is started in the processing of step

S11. In this processing, CPU 106 starts rotation of the two lottery boards 38a and 38b. After this processing is completed, the processing proceeds to step S12.

Subsequently, in the processing of step S12, the roll preventive valves
5 are moved. In this processing, CPU 106 permits use of only slopes out of the four slopes 36a to 36d, along which the lottery ball 21 can be guided in conformity with the rotational directions of the lottery boards 38a and 38b. Therefore, the two roll preventive valves 37a and 37b are turned to close the routes to the slopes which should be made unavailable. Accordingly, the
10 lottery ball 21 is allowed to roll in the direction matched with the rotational directions of the lottery boards 38. After this processing is completed, the processing proceeds to step S13.

Subsequently, in the processing of step S13, one of the lottery balls 21 raised by the lottery ball raising device 20 is made to drop. In this processing,
15 CPU 106 opens the lottery gate 26 to pass only one lottery ball 21 through the lottery gate 26. The lottery gate 26 is closed again at the point in time when one lottery ball 21 passes through the lottery gate 26. As described above, the lottery ball 21 thus having passed passes through the upper gutter 28, drops down from the drop hole 30 to the steering-wheel type rotating device 32 and
20 further the lottery ball receiving portion 34. Further, the lottery ball 21 passes through any one of the slopes 36a to 36d, and then rolls to anyone of the lottery boards 38a and 38b. After the above processing is completed, the processing proceeds to step S14.

Subsequently, a lottery result is recorded in the processing of step S14.
25 In this processing, CPU 106 records a symbol selected by the lottery. CPU 106 receives a signal indicating entrance of the lottery ball 21 from the ball entrance detecting sensor 42 corresponding to any one of the lottery holes 40

which the lottery ball 21 enters, records the symbol corresponding to the signal as a lottery result, and also displays the symbol on each display device 70. After the above processing is completed, the processing proceeds to step S15.

Subsequently, in the processing of step S15, it is determined whether
5 drop of a predetermined number of lottery balls 21 is finished. In this processing, CPU 106 determines whether the drop of the predetermined number of lottery balls 21 is finished. When it is determined that the predetermined number of lottery balls 21 has not yet been finished, CPU 106 returns the processing to step S13. If it is determined that the predetermined
10 number of lottery balls 21 has already dropped, CPU 106 returns the processing to step S16. Since it takes some time from the passage of the lottery ball 21 through the lottery gate 26 until entrance of the lottery ball to any lottery hole 40, a more accurate determination may be made by using various methods, for example, by making determination after a predetermined period of time elapses
15 from the passage of the lottery ball 21 through the lottery gate 26.

Subsequently, in the processing of step S16, the lottery balls 21 are withdrawn. In this processing, CPU 106 opens the shutter 43 provided to the lottery hole 40 which the lottery ball 21 has entered, withdraws the lottery balls 21 and then closes the shutter 43 again. Accordingly, the lottery balls entering
20 the lottery holes 40 during game are allowed to be partially continuously exposed from the lottery holes 40 until the game ends. Therefore, a person who can hardly watch the display device 70 can easily recognize which symbol is selected. After the above processing is completed, the processing proceeds to step S17.

25 In this embodiment, the lottery balls are partially exposed from the lottery holes until one game is finished. However, the present invention is not limited to this. A lottery ball may be withdrawn at the point of time when it enters

a lottery hole 40.

Subsequently, in the processing of step S17, the sailboat type lottery machine 12 is swung. In this processing, CPU 106 drives the swinging device 46 as shown in Figs. 17A to 17G to swing the sailboat type lottery machine 12.

5 After the above processing is completed, the processing proceeds to step S18.

Subsequently, in the processing of step S18, the partition gate 52 is opened/closed. In this processing, CPU 106 successively opens/closes the partition gates 52a, 52b and 52c. Accordingly, the lottery balls 21 located at the lottery ball standby portion 50a are fed to the lottery ball raising device 20,
10 the lottery balls 21 located at the lottery ball standby portion 50b are fed to the lottery ball standby portion 50a, and the lottery balls 21 located at the lottery ball withdrawing passage 44 are fed to the lottery ball standby portion 50b. Accordingly, as described above, conveyance of lottery balls 21 used in the next game and movement of withdrawn lottery balls 21 to the lottery ball
15 standby portion 50 can be simultaneously performed. After the above processing is completed, the processing proceeds to step S19.

In the above embodiment, the lottery balls 21 in the lottery ball standby portion 50 are partitioned by the partition gates 52 every number of lottery balls 21 used in one game. However, the present invention is not limited to this.
20 For example, this embodiment may be modified so that only one partition gate 52a is provided to the lottery ball standby portion 50, a ball detecting sensor is provided in the vicinity of the partition gate 52a, and the partition gate 52a is closed at the point in time when a predetermined number of lottery balls 21 pass through the partition gate 52a, whereby only the predetermined number of
25 lottery balls 21 can be discharged.

Subsequently, in the processing of step S19, the sailboat type lottery machine 12 is returned to the original position. In this processing, CPU 106

drives the swinging device 46 to return the sailboat type lottery machine 12 to the original position. After the above processing is completed, this subroutine immediately ends.

5 In another embodiment, the lottery ball 21 is rolled under the state where the lottery boards 38a and 38b stay still, and the rolling direction of the lottery ball 21 is detected by a sensor provided to any one of the plurality of slopes 36a to 36d when the lottery ball 21 passes through any one of the plurality of slopes 36a to 36d. The rotational direction of the lottery board 38a or 38b is determined in conformity with the rolling direction, whereby the
10 rotational direction of the lottery board 38a or 38b and the rolling direction of the lottery ball 21 can be matched with each other. In this case, the processing of step S11 is carried out after the processing of step S13, and the processing of step S12 is not carried out.

[Processing of Operating Unit]

15 Fig. 12 shows a subroutine for controlling the advance of the game in the personal game operating unit 14.

In the processing of step S21, it is first determined whether the gaming machine 10 is in the game play. In this processing, CPU 106 determines whether the gaming machine 10 is in the game play. If CPU 106 determines
20 that the gaming machine 10 is in the game play, CPU 106 immediately finishes this subroutine without carrying out any processing because a game player cannot participate in the game. If CPU 106 determines that the gaming machine 10 is not in the game play, CPU 106 shifts the processing to step S22.

Subsequently, in the processing of step S22, it is determined whether a
25 coin is thrown into the gaming machine. In this processing, CPU 106 determines that a signal indicating detection of throw-in of a coin is received from the coin sensor 80. If it is determined that the signal is not received, that is,

if it is determined that no coin is inserted by a game player, CPU 106 immediately finishes this subroutine without carrying out any processing. If it is determined that the signal is received, that is, if it is determined that a coin is thrown in by a game player, CPU 106 shifts the processing to step S23.

5 Subsequently, in the processing of step S23, matrix cards are created. In this processing, CPU 106 creates a predetermined number of matrix cards on which figures of trump cards are arranged by lottery. This processing will be described later. After the above processing is completed, CPU 106 shifts the processing to step S24.

10 Subsequently, in the processing of step S24, the number of bets is set. In this processing, CPU 106 promotes a game player to input a desired number of bets, and the number of bets in the game is set on the basis of information input by the game player. This processing will be described later. After this processing is completed, CPU 106 shifts the processing to step S25.

15 Subsequently, the game is executed in the processing of step S25. In this processing, CPU 106 selects figures of trump cards one by one by lottery, and the game advances according to this lottery. The lottery is repeated at a predetermined number, and the game is finished at the point of time when the predetermined number of lotteries are finished. This processing will be
20 described later. After the above processing is completed, CPU 106 shifts the processing to step S26.

 Subsequently, Payoff of coins is carried out in the processing of step S26. In this processing, CPU 106 carries out the Payoff of coins on the basis of the result of the game executed in step S25. This processing will be
25 described later. After the processing of step S27 is completed, CPU 106 shifts the processing to step S27.

 Subsequently, in the processing of step S27, it is determined whether

there are some remaining coins. In this processing, CPU 106 determines whether some coins which are thrown in by the game player or acquired by the game player still remain in the gaming machine 10. If it is determined that some coins having been thrown in or acquired by the game player still remain in the gaming machine 10, the game can be carried out newly, and thus CPU 106 returns to the processing of step S23. If it is determined that no coin having been thrown in or acquired by the game player remains in the gaming machine 10, CPU 106 immediately finishes this subroutine because the game cannot be further continued.

10 [Card Creating Processing]

In the step S23 described above, a subroutine as shown in Fig. 13 is called. In this case, a card as shown in Fig. 9 is created as an example.

First, in the processing of step S31, a winning combination is selected by lottery on the assumption that only one winning combination is necessarily established in a matrix card. In this processing, CPU 106 determines one winning combination from a list of fixed winning combinations stored at a predetermined position of ROM 108. After this processing is completed, CPU 106 shifts the processing to step S32.

Subsequently, in the processing of step S32, symbols used in the fixed winning combination are selected. In this processing, CPU 106 selects the symbols used in the fixed winning combination in the above step S31. CPU 106 treats a matrix card comprising 5 cells x 5 cells in the rows and the columns respectively as shown in Fig. 9, and thus five symbols needed to form the winning combination are selected.

For example, in the case of a poker game, if the fixed winning combination is a "royal straight flush," one of four marks of spades, hearts, diamonds and clubs selection made by lottery. In the case of the winning

combination, the numerals are necessarily limited to fives of A, K, Q, J, 10, and thus only the mark may be selected by lottery.

Furthermore, if the fixed winning combination is a "full house," one symbol is first selected, and then two symbols which are identical to the symbol
5 in numeral, but different from the symbol in mark are selected. Subsequently, one symbol comprising a numeral different from the above numeral is selected, and one symbol which is identical to the above symbol in numeral, but different from the above symbol in mark is selected. Accordingly, a combination of a set of symbols comprising the same numeral and a set of two symbols
10 comprising the same numeral which is different from the former numeral is completed.

After the above processing is completed, CPU 106 shifts the processing to step S33.

Subsequently, in the processing of step S33, a line on which the fixed
15 winning combination is arranged is selected. In this processing, CPU 106 determines the position of the line on which the winning combination of the symbols determined in the step S32 is described above. CPU 106 selects, by lottery, one of twelve rows on the matrix card (corresponding to inversely-displayed numerals from 1 to 12 in Fig. 9) on which the symbols
20 constituting the fixed winning combination should be arranged, and determines one line. After this processing is completed, CPU 106 shifts the processing to step S34.

Subsequently, in the processing of step S34, the symbols constituting the fixed winning combination are arranged. In this processing, CPU 106
25 arranges the five symbols determined in step S32 on the line determined in step S33. CPU 106 determines the positions of five cells on the line at which the five symbols should be respectively disposed, and arranges all the symbols

on the line. After the above processing is completed, CPU 106 shifts the processing to step S35.

Subsequently, in the processing of step S35, the arrangement of symbols on the other cells is carried out. In this processing, CPU 106
5 arranges symbols on the other twenty cells on which the symbols are not arranged in the above step S34. CPU 106 determines each symbol to be arranged on each of the twenty cells by lottery, and arranges the symbol selected by lottery on the cell, whereby the symbols are arranged on all the twenty five cells on the matrix card. After the above processing is completed,
10 CPU 106 shifts the processing to step S36.

Subsequently, in the processing of step S36, the cell movement can be carried out. In this processing, CPU 106 may move each of the outer peripheral cells and inner peripheral cells so that the symbols constituting the fixed winning combination which are arranged from the step S31 to the step
15 S34 are not arranged on one line. After this processing is carried out or after it is selected that this processing is not executed, CPU 106 shifts the processing to step S37.

Subsequently, in the processing of step S37, it is determined whether preparation of a predetermined number of matrix cards is completed. In this
20 processing, CPU 106 determines whether the number of matrix cards created in the processing from the step S31 to the step S35 reaches the predetermined number. If it is determined that the preparation of the predetermined number of matrix cards has not yet been completed, CPU 106 returns to the processing of step S31 to create the remaining cards. If it is determined that the
25 preparation of the predetermined number of cards has been completed, CPU 106 immediately finishes this subroutine.

In this embodiment, the symbols are arranged so that a winning

combination which may be established according to a way of moving the cells is contained in a matrix card. However, the present invention is not limited to this, and symbols may be arranged on all the cells by lottery. In this case, only the step S35 described above is carried out, and the processing of the other steps S31 to S34 and the step S36 does not need to be executed.

[Processing of Setting Number of Bets]

In the step 24 described above, a subroutine shown in Fig. 14 is called.

In the processing of step S41, a card selection screen is displayed. In this processing, CPU 106 displays a card selection screen on the display device 70, and promotes a game player to select one of the plurality of cards created in the step S23 of Fig. 12. At this time, one of the plurality of cards is displayed on the display device 70. With respect to the other remaining cards, the game player carries out a selecting operation to exchange the displayed one card with one of the other cards and displays the one card thus exchanged. By repeating this operation, all the cards created in step S23 of Fig. 12 can be displayed for the game player. After this processing is completed, CPU 106 shifts the processing to step S42.

Subsequently, in the processing of step S42, it is determined whether a settling operation is carried out. In this processing, CPU 106 determines whether the game player carries out the settling (enter) operation. When CPU 106 does not receive from the touch sensor 72 a signal indicating that the operation has been carried out, CPU 106 determines that the settling operation has not yet been carried out by the game player, and repeats this step. On the other hand, when CPU 106 receives from the touch sensor 72 a signal indicating that the above operation is carried out, CPU 106 determines that the settling operation is carried out by the game player, and shifts the processing to step S43.

Subsequently, in the processing of step S43, an input screen of the number of bets is displayed. In this processing, CPU 106 displays on the display device 70 a screen for promoting the game player to determine the number of coins to be bet to the selected card. At this time, a table indicating
5 odds to the bet number of coins in connection with the types of completed winning combinations is displayed on the screen in addition to the card. The game player determines the number of coins to be bet by referring to this table. After this processing is completed, CPU 106 shifts the processing to step S44.

Subsequently, in the processing of step S44, it is determined whether
10 the settling operation is carried out. In this processing, CPU 106 determines whether the settling operation is carried out after inputting the betting number of coins desired by the game player. When not receiving from the touch sensor 72 a signal indicating that the operation is carried out, CPU 106 determines that the settling operation has not yet been carried out by the game player, and
15 repeats this subroutine. If receiving from the touch sensor 72 a signal indicating that the operation has been carried out, CPU 106 determines that the settling operation is carried out by the game player, and finishes this subroutine immediately.

[Game Execution Processing]

20 In the step S25 described above, a subroutine shown in Fig. 15 is called.

In the processing of step S51, an initially effective cell is determined. In this processing, CPU 106 selects an initially effective cell from the twenty-five cells on a matrix card by lottery. The initially effective cell is a cell which has
25 been effective from the start time of a game. CPU 106 draws lotteries regarding the number of the initially effective cells and the positions thereof, and activates the effective cells on the basis of the lottery result. After the above

processing is completed, CPU 106 shifts the processing to step S52.

In this embodiment, the number of initially effective cells is determined by lottery. However, the present invention is not limited to this number, and a fixed number of initially effective cells may be set in advance.

5 Subsequently, lottery of symbols is carried out in the processing of step S52. In this processing, by driving the sailboat type lottery machine 12, CPU 106 selects one symbol by lottery. CPU 106 receives from any one of the ball entrance detecting sensor 42 a signal associated with the symbol corresponding to any one of a plurality of holes 40 which the lottery ball enters,
10 and displays the symbol thus selected in a list of lottery results displayed at the upper portion 90 of the display device 70. After the above processing is completed, CPU 106 shifts the processing to step S53.

 Subsequently, a symbol collation is carried out in the processing of step S53. In this processing, CPU 106 collates the symbol selected in the above
15 step S52 with the symbols displayed on the matrix card displayed on the display device 70. If the same symbol as the selected symbol is displayed on the matrix card, the cell on which the symbol is displayed is activated, and the color of the cell is changed. After the above processing is completed, CPU 106 shifts the processing to step S54.

20 Subsequently, in the processing of step S54, cell moving processing of moving cells can be carried out. In the processing, CPU 106 enables cells to be moved by the dials 76L and 76S, and allows a game player to move the cells by manipulating the dials 76L and 76S. When the dial 76L is rotated by a game player, symbols allocated to the respective cells adjacent to the outer peripheral
25 portion of a matrix card displayed on the display device 70 are moved to adjacent cells thereto one by one according to the rotational angle of the dial 76L. This cell moving processing may be allowed to be carried out at all times,

however, it may be allowed to be carried out under a predetermined condition. For example, the cell moving processing may be made impossible after a predetermined number of lotteries are completed. After the above processing is completed or after it is selected not to execute the cell moving processing as described above, CPU 106 shifts the processing to step S55.

Subsequently, in the processing of step S55, it is determined whether a predetermined number of lotteries are carried out. In this processing, CPU 106 determines whether the lottery of a symbol in the step S52 is carried out for a predetermined number of times. If it is determined that the number of lotteries having been executed has not yet reached the predetermined number, CPU 106 returns to the processing of step S52. If it is determined that the number of lotteries having been executed has reached the predetermined number, CPU 106 immediately finishes this subroutine. For example, in the case of a game combined with a poker game, it is preferable that this symbol lottery is carried out at five or more times.

[Coin Payoff Processing]

In the above step S26, a coin payoff subroutine as shown in Fig. 16 is called.

First, in the processing of step S61, it is determined that a winning line exists on the plurality of rows on the matrix card. In this processing, CPU 106 determines whether a line having a predetermined number of activated cells exists in the plurality of rows having combinations of symbols on the matrix card displayed on the display device 70. When CPU 106 determines that no winning line exists in the plurality of rows, CPU 106 shifts the processing to step S64. If any line exists in the plurality of rows, CPU 106 shifts the processing to step S62.

Subsequently, in the processing of step S62, the number of coins to be

paid out is calculated.

In this processing, the number of coins bet on the game played by the game player is multiplied by the payout odds corresponding to the type of winning combination of the line determined as a winning line In step S61, whereby CPU 106 calculates the payout number of coins. At this time, when a plurality of winning rows exist, the odds of the winning combinations having the highest payout odds out of the plurality of winning combinations are applied. After the above processing is completed, CPU 106 shifts the processing to step S63.

In this embodiment, when a plurality of winning rows exist, the odds of the winning combination having the highest payout odds out of the plurality of winning combinations are applied. However, the present invention is not limited to this. For example, it may be modified so that the payout odds of all the winning combinations may be added to one another, and the number of coins bet by the game player is multiplied by the payout odds thus calculated.

Subsequently, in the processing of step S63, CPU 106 adds the number of payout coins calculated in step S62 to the number of coins which are thrown in the gaming machine 10 by the game player, but remain because they are not bet on the game. After this processing is completed, CPU 106 shifts the processing to step S64.

Subsequently, in the processing of step S64, it is determined whether some coins remain. In this processing, CPU 106 determines whether there remain any coins which were thrown in the gaming machine by the game player or paid out because of winning of the game and stocked in the gaming machine 10. If it is determined that no remaining coin exists, CPU 106 immediately finishes this subroutine without carrying out any processing because the game cannot be further carried out. If it is determined that any coins remain, CPU

106 shifts the processing to step S65.

Subsequently, in the processing of step S65, it is determined that a payout operation is carried out. In this processing, CPU 106 determines whether the payout operation is carried out by the game player. When not
5 receiving a signal from the touch sensor 72 indicating that the operation is carried, CPU 106 determines that no payout operation has been carried out by the game player, and immediately finishes this subroutine without carrying out any processing. When not receiving a signal from the touch sensor 72 indicating that the operation has been carried out, CPU 106 determines that the
10 payout operation has been carried out by the game player, and shifts the processing to step S66.

Subsequently, in the processing of step S66, the payout processing of coins is carried out. In this processing, CPU 106 transmits to a hopper 88 a signal indicating payout of the total number of coins acquired by adding the
15 number of coins gained through the game by the game player with the number of coins which are stocked in the gaming machine 10 because these coins are thrown in the gaming machine 10 by the game player, but are not bet on the game. The hopper 88 receiving the signal discharges the total number of coins from a coin payout port 82. After the above processing is completed,
20 CPU 106 immediately finishes this subroutine.

According to the above construction, the throw-in direction of the lottery ball and the rotational direction of the base body are substantially coincident with each other, so that the speed of the lottery ball is not quickly reduced and thus the lottery ball is prevented from easily entering a lottery hole soon.
25 Therefore, there can be provided a game which makes it difficult for a game player to predict a lottery hole which a lottery ball enters and further enhances the sense of excitement of the game player. Furthermore, by rotating the base

body clockwise and counterclockwise, the variation of the game is enhanced, and game players are prevented from growing tired of the game. Still furthermore, the lottery ball is prevented from entering the lottery hole immediately without consideration for the speed of the lottery ball. Accordingly, it is difficult to predict a lottery hole which a lottery ball enters, and thus there can be provided a game which can further promote the feeling of impatience and bring game players an enhanced sense of anticipation.

In this embodiment, CPU 106 executing the step S14 of Fig. 11, the step S24 of Fig. 12, etc., corresponds to an example of the game result determination means. The lottery ball raising device 20, the lottery gate 26, the slopes 36a to 36d, etc., correspond to an example of the lottery ball throwing means. The lottery ball raising device 20, etc., correspond to an example of the feeding means. The ball detecting sensor, etc., correspond to examples of the detecting means and the passage detecting means. CPU 106 executing the step S17, the step S19, etc., of Fig. 11 corresponds to an example of the tilt control means. The shutter 43, etc., correspond to an example of the lottery ball discharging means. The lottery ball standby unit 50, etc., correspond to an example of the lottery ball accumulating means. CPU 106 executing the processing of the step S18, etc., corresponds to an example of the gate control means.

Next, a second embodiment according to the present invention will be described hereunder.

A gaming machine 310 according to this embodiment is a gaming machine with which a game is played by using not only coins, medals, game balls or tokens, but also game media such as cards or the like which are given to game players or in which game valuable information to be given to game players is stored. The following description will be made on the assumption

that medals are used.

[Construction of Gaming machine]

First, the outline of the gaming machine will be described with reference to Fig. 18. Fig. 18 is a perspective view showing the general view of the gaming machine according to the present invention.

As shown in Fig. 18, a gaming machine 310 comprises a lottery machine 312, and a plurality of gaming terminals 314. The gaming machine 310 can supply a game to a plurality of game players by a plurality of gaming terminals 314A to 314J at the same time.

The lottery machine 312 is mainly constructed by a cabinet 313 in the form of a ship, and disposed at the center of the gaming machine 310. Two lottery boards 338 and 339 are disposed at the center of the lottery machine 312. A total of fifty-two lottery holes 340 and 341 (see Fig. 21) are formed in the two lottery boards 338 and 339.

Each of the plurality of lottery holes 340 and 341 corresponds to identification information which is a combination composed of first symbols of spades, clubs, hearts and diamonds and each of second symbols of numerals from 2 to 10 and marks of A, J, Q and K. The identification information is used to determine a lottery result. That is, the respective plurality of lottery holes 340 and 341 of the lottery boards 338 and 339 correspond to identification information for determining a lottery result. A lottery is carried out according to any one of the plurality of holes 340 and 341 which a lottery ball enters, and a game result is determined. A swinging device 346 (see Fig. 19) is disposed in the lottery machine 312, and the cabinet 313 is swingable so that the stern 312A and the stern 312B are displaced in the vertical direction. That is, the swinging device 346 tilts the cabinet 313. In this embodiment, it can be tilted at an angle of about 8 degrees in the vertical direction with respect to the

horizontal plane, however, the presents invention is not limited to this. In this swinging motion, it takes about 12 seconds to shift from a state where the stern 312A is located at the upper position of about 8 degrees with respect to the horizontal plane to a state where the stern 312A is located at the lower position of about 8 degrees with respect to the horizontal plane. However, the present invention is not limited to this swing time, and it is preferable that the swing time is set in the range from about 8 seconds to about 16 seconds. Specifically, the period of the swinging motion can be controlled by a main control circuit 400 described later, and it may be varied by a manager of a game place or the like.

Furthermore, In this embodiment, the swingable ship-type cabinet 313 is used, and thus a visual representation effect can be given to game players, so that enjoyment of the game can be enhanced.

The plurality of gaming terminals 314A to 314J are disposed at both the stroke-side and bow-side of the lottery machine 312. In this embodiment, ten gaming terminals 314A to 314J are provided as shown in Fig. 18. Furthermore, medal payout ports 382A to 382J are formed in the plurality of gaming terminals 314A to 314J, respectively. In Fig. 18, gaming terminals 314F to 314H and medal payout ports 382F to 382J which are hidden by the lottery machine 312 are not illustrated.

In this embodiment, the ten gaming terminals 314A to 314J are equipped as the plurality of gaming terminals. However, the present invention is not limited to this. For example, a plurality of gaming terminals whose number of machines is not equal to ten may be equipped, and only one gaming terminal may be equipped.

[Construction of Lottery Machine]

The outline of the lottery machine 312 of the gaming machine 310 will be described with reference to Fig. 19. Fig. 19 is a longitudinally-sectional

view showing the general view of the lottery machine 312 according to this embodiment.

As shown in Fig. 19, a screw conveyor 320 serving as a feeding unit is disposed at the stern 312B of the lottery machine 312. The screw conveyor 320 is a device for upward feeding lottery balls used for the lottery through the inside of the lottery machine 312. The lottery ball of this embodiment is designed to have a diameter of about 60 millimeters, however, it may be designed in another style. For example, the diameter of the lottery ball may be set to not less than about 60 millimeters. Furthermore, it is preferable that the lottery ball is formed of a material through which an infrared ray is not transmitted or which is processed so that an infrared ray is not transmitted therethrough, and also it is easily detected by various kinds of sensors such as an optical sensor, etc.,

The screw conveyor 320 comprises a spiral member 320A which extends upward so as to be inclined at a predetermined angle, a support plate 320B extending along the spiral member 320A, and a lottery ball raising motor 320C for rotating the spiral member 320A. A groove which has a radius of curvature larger than the radius of the lottery balls and designed in a spiral form is equipped to the spiral member 320A. By driving the lottery ball raising motor 320C, the spiral member 320A is rotated, and the lottery balls are upward fed while being held between the spirally-formed group in the spiral member 320A and the support plate 320B. That is, the screw conveyor 320 is disposed at the outside of the cabinet 313, and carries the lottery balls so that the lottery balls are visible.

One end of a lottery ball guide unit 324 is disposed at the upper end of the screw conveyor 320. A guide passage (not shown) is formed in the lottery ball guide unit 324. The lottery ball guide unit 324 guides through the guide

passage lottery balls carried by the screw conveyor 320.

A lottery ball holding unit 332 is disposed at the upper side of the lottery machine 312. The lottery ball holding unit 332 is formed of resin having a light-transmissible property so that it can be viewed by game players, etc.

5 Therefore, the remaining number of lottery balls can be indicated to game players. The lottery ball holding unit 332 is designed to be opened at the upper portion thereof, and holds lottery balls guided from the lottery ball guiding unit 324. Furthermore, an opening (not shown) through which one lottery ball is passed is formed in the bottom surface of the lottery ball holding unit 332.

10 A cylindrical rotator 328 as a throw-in portion is disposed at the lower side of the lottery ball holding unit 332. The rotator 328 has a function of closing the opening formed in the bottom surface of the lottery ball holding unit 332. Accordingly, the lottery balls held in the lottery ball holding unit 332 are kept to be held.

15 A holding hole (not shown) for holding one lottery ball is formed in the rotator 328. A driving unit (not shown) comprising a rotating motor 326 (see Fig. 27) or the like is disposed at the edge of the rotator 328. The rotator 328 is rotated by driving the driving unit. By rotating the rotator 328, the holding hole is kept to be opened upward, and one ball held in the lottery ball holding
20 unit 332 is made to drop through the opening to the holding hole. By further rotating the rotator 328, the opening formed in the lottery ball holding unit 332 is closed and also the one lottery ball is kept to be held in the holding hole. By further rotating the rotator 328, the opening formed in the lottery ball holding portion 332 is closed and also the holding hole is set to be opened downward,
25 so that the one lottery ball held in the holding hole is made to drop downward.

As described above, one lottery ball held in the lottery ball holding unit 332 is extracted and drops downward. That is, the rotator 328 has a function

of throwing a lottery ball carried by the screw conveyor 320 from the upper side to the face portions 338A and 339A. The rotator 328 is formed of a resin having light-transmissible property, so that the lottery ball held in the holding hole is kept visible to game players. Therefore, the advance of the game can
5 be indicated to the game players.

A lottery ball receiving portion 334 having transparency is disposed at the lower side of the rotator 328. The lottery ball receiving portion 334 receives a lottery ball dropping from the holding hole of the rotator disposed at the upper side thereof. Therefore, the lottery ball dropping from the holding
10 hole of the rotator 328 is held in the lottery ball receiving portion 334 while it is kept visible to the game players. The lottery ball receiving portion 334 has two cut-out portions 334C and 334D (see Fig. 20) formed therein, and the lottery ball thus received is thrown to any one of two lottery boards 338 and 339 through the cut-out portion 334C or 334D. Since the lottery machine 312 has a
15 swinging function, the lottery ball held in the lottery ball receiving portion 334 is guided to either of the two lottery boards 338 and 339 according to the tilt angle thereof.

Slopes 336A and 336B having throw-in passages through which a lottery ball can pass are disposed at the cut-out portions 334C and 334D (see
20 Fig. 20) of the lottery ball receiving portion 334. The slopes 336A and 336B are used to throw the lottery ball held in the lotteryball receiving portion 334 to any one of the face portions 338A and 339A. The slopes 336A and 336B are formed of resin having transparency. Therefore, the lottery ball passing through the slope 336A and 336B is kept visible to the game players. As
25 described above, the screw conveyor 320, the rotator 328, the slopes 336A and 336B, etc., enable lottery balls discharged from the plurality of lottery holes 340 and 341 to be thrown to the face portions 338A and 339A of the cabinet

313 through a first withdrawing passage 344 and a second withdrawing passage 350.

The two lottery boards 338 and 339 are disposed at the lower ends of the slopes 338A and 338B. A lottery ball can roll on the lottery boards 338 and 339, and the face portions 338A and 339A having a horizontal plane with respect to the cabinet 313 are provided. That is, the face portions 338A and 339A on which the lottery ball can roll are formed on the lottery boards 338 and 339, and a plurality of lottery holes 340 and 341 are formed on the upper surfaces of the face portions 338A and 339A. In other words, the cabinet 313 is equipped with the plurality of lottery boards 338 and 339, and thus it has the face portions 338A and 339A on which the lottery balls can roll, and the plurality of lottery holes 340 and 341 provided on the face portions 338A and 339A. Furthermore, the two lottery boards 338 and 339 can be rotated horizontally with respect to the upper surfaces of the face portions 338A and 339A.

The plurality of lottery holes 340 and 341 for holding one lottery ball are formed on the upper surfaces of the face portions 338A and 339A. These plurality of lottery holes 340 and 341 are designed in such depth that about two-fifth part of one lottery hole projects from each lottery hole. Therefore, a lottery ball entering each of the plurality of lottery holes 340 and 341 is held so as to be visible to game players, and a subsequent throw-in lottery ball collides with lottery balls held in the plurality of lottery holes 340 and 341 and changes its rolling direction. Of course, according to the rotation of the lottery boards 338 and 339, the lottery balls entering these lottery holes 340 and 341 are rotated while being held in the plurality of lottery holes.

A shutter 347 is provided at the bottom surfaces of the plurality of lottery holes 340 and 341. In this game, the shutter 347 is controlled to a close state, so that lottery balls entering the plurality of lottery holes 340 and 341 are

held. After the game is completed, the shutter 347 is controlled to an open state, so that the lottery balls entering the plurality of lottery holes 340 and 341 are discharged into the lottery machine 312. Furthermore, a ball entrance detecting sensor 349 is provided to each of the plurality of lottery holes 340 and 341. The ball entrance detecting sensor 349 detects that a lottery ball enters each of the plurality of lottery holes. Describing in detail later, under the condition where a lottery ball enters any one of the plurality of lottery holes 340 and 341 on the lottery boards 338 and 339, identification information corresponding to the lottery hole which the lottery ball enters is selected, and a game result is determined on the basis of the identification information thus selected. That is, under the condition where a lottery ball enters any one of the plurality of lottery holes 340 and 341, the game result is determined on the basis of the identification information associated with any one of the plurality of lottery holes 340 and 341 which the lottery ball enters. In this embodiment, one ball entrance detecting sensor 349 is equipped to each of the plurality of lottery holes 340 and 341, however, a plurality of ball entrance detecting sensors may be equipped to each of the plurality of lottery holes in order to immediately detect the entrance of the lottery ball. Furthermore, in order to reduce the working load and the cost in the manufacturing process, the ball entrance detecting sensor is not necessarily required to be equipped for every lottery hole. That is, the entrance of lottery balls to a plurality of lottery balls may be detected by using one the prize-winning detection sensor. For example, two prize-winning detecting sensors for detecting prize-winning entrance of lottery balls in lottery holes through one revolution of the lottery board are used, and it is detected by the detecting sensors whether the lottery balls enter the prize-winning lottery holes every time the lottery board makes a half revolution.

A withdrawing unit 345 having a first withdrawing passage 344 and a second withdrawing passage 350 is provided below the two lottery boards 338 and 339 of the lottery machine 312 as described above. The withdrawing unit 345 receives lottery balls entering a plurality of lottery holes 340 and 341 in the first withdrawing passage 344 by controlling the shutter 347 to the open state. Furthermore, the withdrawing unit 345 is equipped with slant portions 353A and 353B for making the lottery balls received in the first withdrawing passage 344 drop downward. Still furthermore a second withdrawing passage 350 extending in the horizontal direction is formed below the slant portions 353A and 353B. Accordingly, the lottery balls entering the plurality of lottery holes 340 and 341 are guided through the first withdrawing passage 344 to the second withdrawing passage 350, and held therein. That is, the first withdrawing passage 344 and the second withdrawing passage 350 are equipped to the cabinet 313, and allow the lottery balls discharged from the a plurality of lottery holes 340 and 341 to pass therethrough.

An open/close gate 352 is equipped to the second withdrawing passage 350. The open/close gate 352 is controlled to be freely opened/closed. Therefore, when the open/close gate 352 is set in an open state, lottery balls are allowed to pass between the second withdrawing passage 350 and the lower end of the spiral member 320A. On the other hand, when the open/close gate 352 is set in a close state, the lottery balls are prohibited from passing between the second withdrawing passage 350 and the lower end of the spiral member 320A. As described above, when the lottery machine 312 is swung so that the stern 312B side is lower than the stern 312A and the open/close gate 352 is controlled to the open state, the lottery balls held in the second withdrawing passage 350 are guided to the lower end of the spiral member 320A. Furthermore, by controlling the open/close gate 352 to the close state,

the lottery balls guided to the lower end of the spiral member 320A are prevented from returning back to the second withdrawing passage 350, and also the lottery balls held in the second withdrawing passage 350 are prevented from being guided to the lower end of the spiral member 320A.

- 5 A lottery ball passage detecting sensor 351 is disposed between the open/close gate 352 and the lower end of the spiral member 320A. The lottery ball passage detecting sensor 351 detects the number of lottery balls which are guided from the second withdrawing passage 350 through the open/close gate 352 to the lower end of the spiral member 320A. Accordingly, when the lottery
- 10 machine 312 is tilted so that the stern 312B side is lower than the stern 312A and also the open/close gate 352 is controlled to the open state so that a predetermined number of lottery balls pass through the open/close gate 352, the open/close gate 352 is controlled to the close state, and a predetermined number of lottery balls are guided to the lower end of the spiral member 320A.
- 15 Furthermore, after the predetermined number of lottery balls are guided to the lower end of the spiral member 320A, these lottery balls are prevented from returning back to the second withdrawing passage 350.

The lottery machine 312 is equipped with the swinging device 348, and it can be swung and tilted around the swinging shaft 348.

- 20 Furthermore, a dot LED display device 327 comprising a plurality of LEDs or the like is disposed above the lottery ball holding unit 332. A round number of the game is displayed on the dot LED display device 327. A START lamp 329 is disposed at the center of the lottery machine 312. In the START lamp 329, a built-in lamp is turned on when a lottery ball drops from the holding
- 25 hole of the rotator 328 to the lottery ball receiving portion 334, and letters "START" are displayed to be visible to the game players. Furthermore, the gaming machine 310 may be equipped with a plurality of illumination devices

(not shown) so that the sailboat type lottery machine 312 is lit up with various colors and various representations are enabled in combination with the swing operation.

[Description of Lottery Ball Receiving Portion, etc.]

5 The lottery ball receiving portion 334 and the slopes 336A and 336B will be described. Fig. 20 is a top view showing the lottery ball receiving portion 334 and the slopes 336A and 336B.

As shown in Fig. 20, a recess portion 334A is formed in the lottery ball receiving portion 334 described above. The recess portion 334A receives a lottery ball dropping from the holding hole of the rotator 328 described above. Two cut-out portions 334C and 334D are formed at the side surfaces 334B of the lottery ball receiving portion 334. Therefore, a lottery ball received in the recess portion 334A is rolled from any one of the two cut-out portions 336C and 336D to the outside of the recess portion 334A by swinging the lottery machine 312.

The upper ends of the slopes 336A and 336B are disposed at the cut-out portions 334C, 334D. As described above, the lower ends of the slopes 336A and 336B are disposed above the lottery boards 338 and 339. Therefore, the slope 336A and 336B accepts a lottery ball rolled from the cut-out portion 336C and 336D to the outside of the lottery ball receiving portion 334, and guides it to either the lottery board 338 or 339. These slopes 336A and 336B are disposed so that the lottery ball is thrown in the same direction as the rotational direction of the lottery board 338 and 339. In this embodiment, the slopes 336A and 336B are linearly formed. However, they may not be formed linearly, but may be designed in a curved-shape.

[Description of Lottery Board, etc.]

The lottery machine 312 and the lottery boards 338 and 339 described

above will be described with reference to Figs. 21 to 23. Fig. 21 is a top view showing the lottery machine 312. Fig. 22 is a perspective view showing the lottery board 338. Fig. 23 is a top view showing the lottery board 338. In Figs. 22 and 23, the lottery board 339 is omitted from description because it has the same construction as the lottery board 338.

As shown in Fig. 21, the two lottery boards 338 and 339 are disposed in the lottery machine 312. The two lottery boards 338 and 339 can be provided with a plurality of lottery holes 340 and 341. Therefore, as compared with a case where only one lottery board is used, the setup space at a game place can be effectively used with no wasteful space because many lottery holes are provided. Accordingly, many lottery holes can be provided, and enhancement in the enjoyment of by expanding payouts, etc., can be performed.

In the case of such a conventional gaming machine that a lottery ball is extracted from a plurality of lottery balls allocated with identification information by lottery and a game result is determined on the basis of the identification information allocated to the lottery ball thus extracted (so-called lottery ball extraction type), fifty-two lottery balls are needed. In this construction, it is not easy to advance the game while making game players recognize desired lottery balls from many lottery balls, and a process which results in that a lottery ball is extracted is omitted. Therefore, game performance which makes the game players feel impatient and gives a sense of anticipation to game players may be lost, and also enjoyment of the game may be lost. On the other hand, in the case of a roulette board type gaming machine like the present invention, fifty two or more lottery holes are needed to implement a bingo game using a poker game. Particularly when one lottery board is used, the size of the lottery board is designed in a large size. Therefore, not only is the space of the game place wasted, but also it is hard for game players to visually recognize the game

result, which may lose enjoyment of the game.

Therefore, by using the two lottery boards, the wasteful space for disposing the large lottery board can be omitted. There will be described a case where one circular lottery board is used and a case where two circular
5 lottery boards are used. Substantially the same number of lottery holes can be provided by equalizing the total circumference length of the lottery board (lottery boards) between the case where only one circular lottery board is used and the case where two circular lottery boards are used. When the two circular lottery boards are used, the radius of each lottery board can be reduced to a half of the
10 radius of the lottery board when the one circular lottery board is used. Therefore, when the two circular lottery boards are used, the total area of the lottery boards can be reduced. By using the plurality of lottery boards as described above, enjoyment of the game can be prevented from being lost without wasting the space of the game place. Furthermore, by providing a
15 plurality of lottery holes along a plurality of circumferences, enjoyment of the game can be prevented from being lost without wasting the space of the game place.

These lottery boards 338 and 339 are designed in a circular shape from the upper side view. The lottery boards 338 and 339 are freely rotatably
20 disposed on the deck board of the cabinet 313. Furthermore, the rotational speed of the lottery board 338 is normally set to 8 to 12 seconds per revolution, however, it may be controlled by a main control circuit 400 described later. For example, the rotational speed may be variably set to 5 to 12 seconds per revolution. In this embodiment, the lottery boards 338 and 339 are trochoidally
25 rotated by lottery board rotating motors (see Fig. 27) 335 and 337 located at the centers of the lottery boards 338 and 339. However, the driving force for rotation may be transmitted from the outer periphery, the bottom surface or

other places. The face portions 338A and 339A for allowing lottery balls to roll are formed in the lottery boards 338 and 339. The lottery boards 338 and 339 are rotated in substantially the same directions (see arrows B1, B2) as the directions (see arrows A1, A2) in which lottery balls are thrown in from the slopes 336A and 336B. Specifically, the lottery board 338 is rotated clockwise, and the lottery ball on the slope 336A is thrown in the clockwise direction. Therefore, when the lottery ball is rolled on the lottery board 338 and 339, the speed thereof is not reduced remarkably. Accordingly, the probability that a lottery ball enters any one of the lottery holes 340 and 341 in an extremely short time is low. The lottery can be performed while the speed of the lottery ball thrown in from the slope 336A and 336B is prevented from being varied due to rotation of the lottery board 338 and 339. This is because there can be provided a non-uniform game in which by throwing in a lottery ball at a predetermined speed when the plurality of lottery holes 340 and 341 provided to the lottery boards 338 and 339 are not rotated, that is, the plurality of lottery holes 340 and 341 are not displaced, it is easy or difficult for the lottery ball to enter any one of the plurality of lottery holes 338 and 339.

Furthermore, a link table 390 is provided between the lottery boards 338 and 339. The link table 390 has a face horizontal to the face portions 338A and 339A of the lottery boards 338 and 339. Therefore, the lottery ball can be rolled between the lottery boards 338 and 339. Furthermore, according to the tilt (swing) motion of the cabinet 313, the lottery ball is rolled over the plurality of lottery boards 338 and 339. The rolling speed of the lottery ball is not remarkably reduced.

Guide portions 392 and 394 are provided between the lottery boards 338 and 339. These guide portions 392 and 394 are located along the outer peripheries of the lottery boards 338 and 339 so as to sandwich the link table

390 therebetween. These guide portions 392 and 394 are designed in a convex-shape with respect to the face portions 338A and 339A of the lottery boards 338 and 339. Therefore, the rolling of the lottery ball is guided by the guide portions 392 and 394 while the lottery ball collides with the guide portions
5 392 and 394.

Furthermore, bank portions 396 and 398 are provided on the outer sides of the lottery boards 338 and 339. The bank portions 396 and 398 are provided along the outer peripheries of the lottery boards 338 and 339. These bank portions 396 and 398 are designed in a convex-shape with respect to the
10 face portions 338A and 339AA of the lottery boards 338 and 339. That is, the bank portions 396 and 398 which are located at a higher position than the upper surfaces of the face portions 338A and 339A are disposed along the outer peripheries of the face portions 338A and 339A. Therefore, even when a lottery ball thrown from the slope 336A and 336B to the lottery board 338 and
15 339 is rolled to the outside of the lottery board 338 and 339, the lottery ball runs upon the bank portion 396 and 398 and then rolls onto the lottery board 338 and 339 again. The traveling way of the lottery ball running upon the lottery board 338 and 339 is varied according to the speed and direction of the lottery ball when it runs upon the lottery board 338 and 339, and this supplies the game
20 players with an unpredictable game, thereby enhancing enjoyment of the game. Of course, the lottery ball is forced to roll to the lottery board 338 and 339, and thus the speed of the lottery ball travelling to the lottery board 338 and 339 is not remarkably reduced. Furthermore, when the lottery ball running upon the bank portion 396 and 398 rolls onto the lottery board 338 and 339, the speed thereof
25 is not remarkably reduced. Therefore, when the lottery ball running upon the bank portion 396 and 398 rolls onto the lottery board 338 and 339, the speed thereof is not remarkably reduced. Accordingly, the probability that the lottery

ball enters any one of the lottery holes 340 and 341 in an extremely short time is low, and the lottery ball enters any one of the lottery holes 340 and 341 in a time frame from about 10 seconds to 30 seconds.

As indicated by arrows B1 and B2, the lottery boards 338 and 339 are
5 rotated in the opposite directions. Therefore, the lottery ball thrown to the lottery board 338 may roll from the lottery board 338 through the link table 390 to the lottery board 339. Conversely, the lottery ball thrown to the lottery board 339 may roll from the lottery board 339 through the link table 390 to the lottery board 338. Accordingly, since the swinging device 346 is equipped to the
10 lottery machine 312, there can be provided a novel game in which the cabinet 313 of the lottery machine 312 is swung and the lottery ball rolls on the lottery boards 338 and 339 so that its rolling orbit between the lottery boards 338 and 339 forms a figure 8 and which is unpredictable to game players. Therefore, enjoyment of the game can be enhanced. The lottery boards 338 and 339, the
15 link table 390, the guide portions 392 and 394 and the bank portions 396 and 398 are surrounded by a fence formed of a transparent resin material, whereby the lottery balls are prevented from rolling to the outside of the fence.

Twenty-six lottery holes 340 and 341 are equipped to each of the lottery boards 338 and 339. Identification information comprising first symbols of
20 spades and hearts is allocated to the plurality of lottery holes 340 provided to the lottery board 338 as shown in Fig. 22. Specifically, A, 2 to 10, J, Q, K of spades and A, 2 to 10, J, Q, K of hearts are allocated to the plurality of lottery holes 340 provided to the lottery board 338. Furthermore, identification information comprising first symbols of clubs and diamonds is allocated to the
25 plurality of lottery holes 341 provided to the lottery board 339. Specifically, A, 2 to 10, J, Q, K of clubs and A, 2 to 10, J, Q, K of diamonds are allocated to the plurality of lottery holes 341 provided to the lottery board 339. That is, some of

the plurality of symbols are set of the same type, and thus a game player is allowed to easily identify his/her desired identification information by watching a lottery-ball rolling place, so that the game player is made to feel further impatient and experiences an enhanced sense of anticipation, thereby

5 enhancing enjoyment of the game. For example, when a lottery ball rolls on the lottery board 338, the game player can easily recognize that the first symbols are clubs and diamonds. That is, identification information in which some of the first symbols are the same type of symbols is allocated to the plurality of lottery holes 340 and 341 of the two load boards 338 and 339.

10 Accordingly, by visually recognizing the lottery board 338 and 339 on which the lottery ball rolls, the game player can easily recognize his/her identification information, so that the game player is made to feel further impatient and experienced an enhanced sense of anticipation, thereby enhancing enjoyment of the game.

15 The plurality of lottery holes 340 are provided along the circumferences C1 and C2 around the center point C0 of the rotation on the lottery board 338 as shown in Fig. 23. The circumference C2 is located inside of the circumference C1. Specifically, sixteen lottery holes are provided along the circumference C1, and ten lottery holes are provided along the circumference

20 C2. That is, the plurality of lottery holes 340 and 341 are formed along the plurality of kinds of circumferences around the rotational center on the face portions 338A and 339A. As described above, the A, 2 to 10, J, Q, K of spades and A, 2 to 10, J, Q, K of hearts are allocated to the twenty six lottery holes 340. Specifically, A, 2 to 8 of spades and A, 2 to 8 of hearts are allocated

25 to the sixteen lottery holes provided along the circumference C1, and 9, 10, J, Q, K of spades and 9, 10, J, Q, K of hearts are allocated to the ten lottery holes provided along the circumference C2.

Furthermore, as shown in Fig. 22, a plurality of projecting portions 342 each having a convex shape with respect to the face portion 338A of the lottery board 338 are provided on the lottery board 338. These plurality of projecting portions 342 are provided along a circumference C3 around the center point C0 of the rotation as shown in Fig. 23. The circumference C3 is located at the inside of the innermost circumference C2 of the circumferences C1 and C2 on which the plurality of lottery holes are provided. That is, the plurality of projecting portions 342 are provided along the circumference C3 at the inside of the innermost circumference C2 of the plurality of kinds of the circumferences C1 and C2 so as to be adjacent to the plurality of lottery holes formed on the innermost circumference C2. Accordingly, for example, a lottery ball collides with some projecting portion to weaken its rolling power and vary its rolling direction, so that the lottery ball can equally enter any one of the lottery holes formed along the inner circumference C2 and the lottery holes formed along the outer circumference C1. Therefore, the lottery can be performed so that a lottery ball can equally enter any one of many lottery holes.

Furthermore, it is preferable that each of the convex-shaped projecting portions 342A may be provided in an area surrounded by the circumference C3 and the tangent rows of adjacent two lottery holes 340A and 340B located along the inner circumference C2. For example, a lottery ball passing between the lottery holes 340A and 340B impinges a projecting portion 342A to weaken the rolling power thereof and vary the rolling direction thereof, so that the lottery ball enters any one of the lottery holes 340A, 340B with higher probability. Furthermore, the lottery ball equally enters any one of the lottery holes formed along the outer circumference C1 and the lottery holes formed along the inner circumference C2 of the plurality of kinds of circumferences C1 and C2, and thus the lottery can be performed so that a lottery ball can equally enter many

lottery holes. Furthermore, the identification information may be controlled by the main control circuit 400 described later and also changed by the manager of the game place or the like. Of course, marks indicating the identification information corresponding to the plurality of lottery holes 340 and 341 formed on the face portions 338A and 339A are indicated in the vicinity of the plurality of lottery holes 340 and 341. The marks indicating the identification information may be changed by replacing the lottery boards 338 and 339.

[Description of Withdrawing Unit]

The withdrawing unit 345 of the lottery machine 312 will be described with reference to Figs. 24A to 24G. Figs. 24A to 24G are longitudinally-sectional views showing a second withdrawing passage 350.

After a game is finished, the shutter 347 is set in the open state as described above, so that lottery balls drop from a plurality of lottery holes 340 and 341. After a predetermined period of time elapses, these lottery balls are passed through the first withdrawing passage 344 and held in the second withdrawing passage 350 as shown in Fig. 7(A). As shown in Fig. 7(A), the cabinet 313 is tilted by the swinging device 346 under the state where the lottery balls 302 are held in the second withdrawing passage 350 of the withdrawing portion 345 described above. In this case, the open/close gate 352 provided to the second withdrawing passage 350 is set in the close state as shown in Fig. 7(B), and thus the lottery balls 302 are held in the second withdrawing passage 350 so as to be located at the open/close gate 352 side. Then, by controlling the open/close gate 352 to the open state as shown in Fig. 7(C), the lottery balls 302 located in the second withdrawing passage 350 roll to the lower side of the spiral member 320A. That is, the cabinet 313 is tilted and the lottery balls 302 located in the second withdrawing passage 350 are guided to the screw conveyor 320. When the lottery balls 302 roll to the lower side of

the spiral member 320A as described above, the number of the lottery balls 302 rolling to the lower side of the spiral member 320A is detected by the lottery ball passage detecting sensor 351. That is, the lottery ball passage detecting sensor 351 detects the number of the lottery balls 302 guided from the second withdrawing passage 350 to the screw conveyor 320. In other words, the lottery ball passage detecting sensor 351 detects the number of the lottery balls 302 passing through the open/close gate 352. When the number of the lottery balls 302 detected by the lottery ball passage detecting sensor 351 reaches a predetermined number, the open/close gate 352 is controlled to be the close state as shown in Fig. 7(D). Accordingly, as shown in Fig. 7(E), the predetermined number of lottery balls roll to the lower side of the spiral member 320A, and then are upward fed by the screw conveyor 320. That is, these lottery balls are set in a throw-in possible state. Under this state, the cabinet 313 is controlled so that the tilted state thereof is returned to the horizontal state as shown in Fig. 7(F), that is, the tilt motion thereof is controlled to stop. That is, the swinging device 346 has a function of stopping the tilting motion of the cabinet 313. Furthermore, as shown in Fig. 7(F), the lottery balls 302 rolling to the lower side of the spiral member 320A are prevented from returning back. Of course, even when the cabinet is tilted in the opposite direction as shown in Fig. 7(G), the lottery balls rolling to the lower side of the spiral member 320A are prevented from returning back.

Accordingly, since the cabinet 313 (see Fig. 18) can be tilted and the lottery balls located in the second withdrawing passage 350 can be guided to the lower side of the spiral member 320A, the lottery balls can be withdrawn by merely tilting the cabinet 313, and thus the gaming machine can be manufactured simply and at a low cost. Particularly with a large-size gaming machine such as a bingo game or the like, it is required to save the space even

if only slightly, and the space can be further saved according to the present invention. Furthermore, it is not required to provide the lottery ball discharging means to each of the plurality of lottery holes, and thus the gaming machine can be manufactured more simply and at a lower cost.

5 [Description of Gaming Terminal]

The gaming terminal 314A of the gaming machine 310 will be described with reference to Fig. 25. Fig. 25 is a perspective view showing the gaming terminal 314A. The description of the gaming terminals 314B to 314J is omitted because they have the same construction.

10 The gaming terminal 314A mainly comprises the display device 370A, the touch sensor 372A, the two dials 376A and 377A, the medal insert port 378A and the main control circuit 500A (see Fig. 28).

The display device 370A is provided at the upper portion of the gaming terminal 314A. On the display device 370A are displayed a matrix card image
15 for a bingo game allocated to each game player, other information or an image of an optional game, etc. That is, the display device 370 comprises a plurality of cells of a plurality of rows and a plurality of columns, and it displays a matrix on which identification information is allocated to each of the plurality of cells. As described later, under the condition where identification information selected
20 by the main control circuit 400 or the like is coincident with any one identification information allocated to each of the plurality of cells, the main control circuit 500A or the like controls to activate the cell corresponding to the identification information, and also controls to give a payout under the condition where the activation control result corresponds to a predetermined style. With this
25 construction, the game advances under the state where various kinds of information displayed on the display device 370A are visually recognized.

Furthermore, a camera (not shown) for picking up an overall image of

the lottery boards 338 and 339 is provided to display the pickup image on the display device 370A. Therefore, when any one of the lottery boards 338 and 339 is hardly viewed, the camera enables game players to visually recognize the lottery boards 338 and 339.

5 Furthermore, the display device 370A is equipped with a touch panel mainly comprising the touch sensor 372A. Accordingly, a game atmosphere under which various kinds of data can be input or instructed by touching the display device 370A can be provided to game players.

10 In this embodiment, various kinds of inputs can be carried out by the touch sensor 372A. However, other operating styles may be used. For example, a plurality of operating buttons may be provided to carry out various input operations.

A seat portion 374A is provided to the game player side of the display device 370A. Two dials 376A and 377A are provided on the upper surface of the seat portion 374A so as to be stacked in the vertical direction. The use of the dials 376A and 377A provides game players with such a game atmosphere that operations which are difficult to be carried out only by pressing normal operating buttons or touching a touch panel can be performed

20 For example, in this embodiment, in a matrix image for a bingo game displayed on the display device 370A, identification information allocated to bingo cells on the outer periphery of the matrix image can be shifted to adjacent bingo cells along the outer periphery. Accordingly, when the second identification information is desired to be continuously shifted, the press operation of the normal operating buttons or the touch operation of the touch panel must be repeated many times, and thus this is cumbersome. Therefore, by using an input device such as the dials 376A and 377A, the continuous operation can be performed by one motion. Therefore, games having high

operability can be supplied to game players. Furthermore, the operation of the gaming terminal can be very simply carried out to make an analog motion such as movement of a scroll or movement of a pointer on the screen, and thus games having high operability can be supplied to game players.

5 Furthermore, the medal insert port 378A for inserting medals is provided at the right side of the dials 376A and 377A. A medal sensor 380A (see Fig. 28) is provided in the medal insert port 378A. The medal sensor 380A detects that a medal is inserted into the medal insert port 378A. As described above, when a medal is inserted into the medal insert port 378A by a
10 game player, the insertion of the medal is detected by the medal sensor 380A.

The main control circuit 500A is disposed in the seat portion 374A to control various devices.

[System Construction of Gaming machine]

The construction of the system of the gaming machine 310 will be
15 described with reference to Fig. 26.

As shown in Fig. 26, the gaming machine 310 mainly comprises a lottery machine control device 360 for controlling the lottery machine 312 and the gaming terminals 314A to 314J.

The lottery machine control device 360 is connected to the ten gaming
20 terminals 314A to 314J so as to make communications with these gaming terminals. The lottery machine control device 360 can control the gaming terminals 314A to 314J by transmitting/receiving various kinds of data and signals to/from the gaming terminals 314A to 314J.

[Electrical Construction of Lottery Machine]

25 The electrical construction of the lottery machine 312 of the gaming machine 310 will be described with reference to Fig. 27.

As shown in Fig. 27, the ball entrance detecting sensor 349 is

connected to an interface circuit group 402 of the main control circuit 400. When a lottery ball enters any one of the plurality of lottery holes 340 and 341, a predetermined signal is supplied from the ball entrance detecting sensor 349 through the interface circuit group 402 to an input/output bus 404. The
5 input/output bus 404 inputs/outputs a data signal or address signal to a central processing circuit (hereinafter referred to as CPU) 406.

The lottery ball passage detecting sensor 351 is also connected to the interface circuit group 402 of the main control circuit 400. When a lottery ball passes through the open/close gate 352, a predetermined signal is supplied
10 from the lottery ball passage detecting sensor 351 through the interface circuit group 402 to the input/output bus 404.

Furthermore, communication control circuits 414A to 414J are connected to the interface circuit group 402. The communication control circuits 414A to 414J are used to connect the lottery machine control device
15 360 to the gaming terminals 314A to 314J so that the communications can be performed therebetween.

ROM (read only memory) 408 and RAM (random access memory) 410 are also connected to the input/output bus 404 described above. ROM 408 records a control program for controlling the processing associated with the
20 games in the lottery machine control device 306. Furthermore, ROM 408 stores initial data, various kinds of programs, etc., for executing the control program. RAM 410 stores flags and values of variables used in the above program.

Furthermore, an interface circuit group 412 is connected to the
25 input/output bus 404. The lottery ball raising motor 320C, the rotating motor 326, the lottery board rotating motors 335 and 337, the shutter 347, the swinging device 346 and the open/close gates 352 are connected to the

interface circuit group 412, whereby the various devices are controlled by CPU 406 to drive the lottery machine 312 described above.

[Electrical Construction of Gaming terminal]

5 The electrical construction of the gaming terminal 314A of the gaming machine 310 will be described with reference to Fig. 28. Description of the gaming terminals 314B to 314J is omitted.

As shown in Fig. 28, the medal sensor 380A is connected to the interface circuit group 502A of the main control circuit 500A. When it is detected by the medal sensor 380A that a medal is inserted from the medal
10 Insert port 378A, a predetermined signal is supplied to the input/output bus 504A through the interface circuit group 502A. The input/output bus 504A inputs/outputs a data signal or address signal to the central processing circuit (hereinafter referred to as CPU) 506A.

Furthermore, the touch sensor 372A is connected to the interface circuit
15 group 502A of the main control circuit 500A. When the touch sensor 372A detects that the display position of an instruction content displayed on the display device 370A is touched by a game player, the touch sensor 372A supplies the signal corresponding to the instruction content to the interface circuit group 502A.

20 Furthermore, the dials 376A and 377B are connected to the interface circuit group 502A described above. When the dials 376A and 377A are rotated by the game player, they supply the signals corresponding to the rotational angles thereof to the interface circuit set 502A.

Furthermore, a communication control circuit 514A is connected to the
25 Interface circuit group 502A. The communication control circuit 514A connects the lottery machine control device 360 and the gaming terminal 314A so that the communications can be performed therebetween.

ROM (read only memory) 508A and RAM (random access memory) 510A are connected to the input/output bus 504A. ROM 508A records a control program for controlling the processing associated with the game in the gaming terminal 314A. ROM 508A stores initial data for executing the control program, the program for controlling the display of the display device 370A, etc. RAM 510 records flags and values of variables used in the above program.

Furthermore, an interface circuit group 512A is connected to the input/output bus 504A. A speaker 586A and a hopper 588A are connected to the interface circuit group 512A, and the interface circuit group 512A supplies driving signals and driving power for controlling the respective devices described above according to the operation processing result in CPU 506A.

Furthermore, a display control device 600A is connected to the interface circuit group 512A. The display control device 600A supplies an image signal for displaying an image to the display device 370A on the basis of an image display command supplied from the main control circuit 500A.

[Standby Frame of Gaming Terminal]

A standby screen is displayed on the display device 370A of the gaming terminal 314A.

Figs. 29 to 31 and Figs. 32A to 32D show an embodiment in which the present invention is applied to a bingo game using a bingo card having 5 x 5 bingo cells. According to a mainstream conventional bingo game, a predetermined number of numerals are selected from twenty-five numerals with a probability of 1/25 for each numeral by lottery, and when a selected numeral exists on a bingo card, the bingo cell corresponding to the numeral is activated. In this case, if five activated bingo cells are aligned with one another in the vertical, horizontal, and diagonal direction, a bingo winning combination is established. In this embodiment, in place of the numerals as the identification

information used in the conventional bingo game, figures of trump cards (one or two jokers may be contained or no joker may be contained. Furthermore, a free spot acquired by activating a specific bingo cell irrespective of the lottery of the identification information may be set to a joker) may be used as

5 Identification Information. In this case, a lottery is carried out with a probability of $1/52$ for each figure (or a probability of $1/53$ or $1/54$), and in place of the bingo winning combinations, poker winning combinations (for example, one pair, two-pair, three-card, straight, flush, full house, four-card, straight flush, royal flush, five-card, etc.,) may be established. Payouts corresponding to the bingo

10 winning combinations or the poker winning combinations are given to game players. Furthermore, a poker winning combination and a bingo winning combination may be simultaneously established on the specific same line of a bingo card. In this case, both the payout corresponding to a poker winning combination and the payout corresponding to a bingo combination are given to

15 the game player. However, the bingo cell activating probability is lower than that of the conventional bingo game, and the probability that a bingo winning combination is established is reduced. Therefore, it is assumed that if five activated bingo cells are aligned on a line in the vertical, horizontal, and diagonal direction of the conventional card, a bingo winning combination is

20 established. However, the number of bingo cells to be aligned in the present invention is not limited to five, and if three or four activated bingo cells are aligned on a line, a bingo winning combination is regarded as being established.

Furthermore, in this embodiment, it is assumed that acceptance of all the operations of the gaming terminal 314 except for the operation of the dials

25 376A and 377A (see Fig. 25) is based on the touch panel system. That is, the touch sensor 372A (see Fig. 28) is provided on the surface of the display device 370A, and a game player touches a predetermined touch portion of the display

device 370A to carry out his/her desired operation of the gaming terminal. However, the present invention is not limited to the touch panel system, and an operation accepting system other than the touch panel system may be used. For example, a prescribed switch group may be provided to accept the game
5 player's operation.

Fig. 29 shows an example in which a screen for accepting a game entry is displayed on the display device 370A of the gaming terminal 314. On the screen, the operations of the touch portion 480 and touch portion 481 for accepting an entry operation of the game and the dials 376A and 377A (see Fig.
10 25) are activated. The operations of the dial 376A and the dial 377A (see Fig. 25) are invalidated. Furthermore, insertion of a medal into the medal insert port 378a (see Fig. 25) is also invalidated, and the inserted medal is paid back from the pay-out port 382A to the game player. The bingo cells having the figures of trump cards arranged in a matrix form on a bingo card displayed on
15 the display device 370A are also displayed with relatively dimly or being hatched, whereby it is shown that these cells are not selected by lottery and thus have not yet been activated. The activation of a bingo cell means the following processing. When there exists a bingo cell having the same figure as the figure of a trump card selected by lottery in the lottery machine 312, the
20 bingo cell is displayed while being distinguishable from the other bingo cells. Through the activation processing of the bingo cell; for example, the bingo cell is displayed relatively brightly, or displayed while the hatching thereof is released. The bingo cells of the bingo card on the standby screen of the gaming terminal 314 are not activated by the lottery of the identification
25 information in the lottery machine 312. Furthermore, the values of line odds and poker odds displayed on the display device 370A are not varied by operation of the game player.

The arrangement of the figures of trump cards displayed on a bingo card having 5 x 5 bingo cells displayed on the standby screen of the gaming terminals 314 is different from the arrangement of a bingo card used in a game play after a game entry. This display is used for the purpose of a demonstration display, and the arrangement of figures of trump cards displayed on a bingo card is newly determined after the game entry.

An entry to the game is accepted by a game player's touching the touch portion 480 or 481. When the game entry is accepted by the gaming terminal 314, the display of the screen of Fig. 30 is varied.

10 [Screen of Gaming Terminal after Game Entry]

The screen after the game entry which is displayed on the display device 370A of the gaming terminal 314 will be described with reference to Fig. 30.

Fig. 30 shows the screen on which a bingo card comprising 5 x 5 bingo cells having figures of trump cards is determined and displayed. At this time, figures of trump cards are arranged so as to beforehand contain a predetermined poker winning combination (for example, a poker winning combination established by five trump cards, that is, a straight, flush, full house, straight flush, royal flush). By preparing a winning combination providing a high payout to a bingo card in advance as described above, the game player's sense of anticipation can be enhanced. The figures of the trump cards are randomly arranged on the bingo cells other than the cells of the predetermined poker winning combination described above. The display of the touch portions 480 and 481 is deleted, and a display of an all REACH state display portion 483 described later appears. Under this screen state, operations such as a BET operation based on a game player's medal insertion, the operation of the dials 376A and 377A (see Fig. 25), etc., are activated for a fixed time (for example, a

predetermined period of time such as 45 seconds for the like). For example, according to the BET operation based on the medal insertion by the game player, the level of line odds displayed on a line odds table 482 is increased by betting a prescribed number of medals and a portion surrounded by an ellipse is upward shifted in Fig. 30, and the numeric values on the display of the odds level of the line odds of Fig. 30 is increased (in Fig. 30, the portion surrounded by the ellipse is located at the second line from the bottom of the line odds table 482, and the odds level is set to 2). Furthermore, by betting a prescribed number of medals, the numerical values of the poker odds displayed on the poker odds table 484 are increased, and the numerical values on the display of the poker odds level of Fig. 30 is increased (in Fig. 30, the values of the odds to the respective poker winning combinations are set as shown in Fig. 30, and the odds level of the poker odds is set to 3). Here, the odds level means an index for classifying the numerical values of the odds into predetermined number of hierarchies according to the numerical level and indicating to which one of the hierarchies the numerical value belongs. For example, as the numerical value of the odds level is higher, the numerical value of the odds may be regarded as being higher, or as the numerical value of the odds level is higher, the numerical value of the odds may be regarded as being lower.

In the display device 370A of the gaming terminal after the game entry, all the bingo cells of the bingo card are displayed relatively dimly or displayed with being hatched, whereby it is shown that the bingo cells have not been selected by lottery and thus not activated.

If the operation of the BET operation based on the medal insertion by the game player or the operation of the dials 376A and 377A (see Fig. 25) is valid, the game player is allowed to rotate the bingo cells located on the inner peripheral portion 490 of the bingo card hatched with diagonal rows extending

in the upper-right direction in Fig. 30 by manipulating the dials 376A, and also the game player is allowed to rotate the bingo cells located on the outer peripheral portion 491 of the bingo card hatched with diagonal rows extending in the lower-right direction in Fig. 30 by manipulating the dial 377A.

5 Specifically, when the game player rotates the dial 376A counterclockwise by a predetermined amount, the bingo cells on the inner peripheral portion 490 of the bingo card are counterclockwise rotated around the center of the bingo card by only the predetermined amount in connection with the rotation of the dial 376A. For example, when the dial 376A is counterclockwise rotated by the amount

10 corresponding to a shift of one bingo cell, for example, a queen of hearts located at the upper left corner of the inner peripheral portion 490 of the bingo card of Fig. 30 is shifted to the position at which the jack of hearts is located, and the jack of hearts is shifted to the position at which 3 of clubs is located. As described above, the bingo cells are counterclockwise shifted one by one.

15 The rotational shift of the bingo cells on the outer peripheral portion 491 of the bingo card by the manipulation of the dial 377A is carried out in the same manner as described above. As described above, the game player can shift the bingo cells so that the bingo cells are arbitrarily rotated around the center of the bingo card. This operation can be performed insofar as the operation is

20 accepted by the gaming terminal 314. By allowing such an operation, the game player is required not only to shift bingo cells so that the bingo cells are arranged with a higher probability of establishing a bingo winning combination, but also to consider a poker winning combination, so that strategy is needed. The strategy indicates that it is required to shift the bingo cells while aiming to

25 achieve a winning combination of two pairs which is low in payout, but high in establishing probability or a winning combination of a royal flush which is high in payout, but low in establishing probability.

[Screen of Gaming Terminal during Game Play]

A display example of the display device 370 of the gaming terminal 314 during game will be described with reference to Fig. 31.

When the figure of a trump card is selected by lottery, the lottery result
5 is transmitted to the gaming terminal 314, and the gaming terminal 314 receiving the lottery result determines whether the same figure as the figure of the trump card transmitted as the lottery result exists on the bingo card displayed on the display device 370A of the gaming terminal 314. If this determination indicates that the same figure exists on the bingo card displayed
10 on the display device 370A of the gaming terminal 314, the bingo cell of the bingo card on which the figure of the trump card is disposed is displayed relatively brightly or displayed while the hatching display thereof is released, whereby it is shown that the bingo cell is a activated bingo cell.

In Fig. 31, for example, seven bingo cells on which a 10 of diamonds,
15 the jack of hearts, etc., are arranged are displayed relatively brightly or displayed while the hatching display thereof is released, whereby it is shown that these bingo cells are activated bingo cells. During the period when the lottery of the lottery machine 312 is carried out for a predetermined number of times, bingo cells activated by the lottery are displayed relatively brightly or
20 displayed while the hatching display thereof is released, whereby it is continued to be shown that these bingo cells are activated bingo cells.

[Display of Reach State]

In the display device 370A of the gaming terminal during game shown in Fig. 31, it is determined which bingo cell should be activated next to establish a
25 bingo winning combination or poker winning combination, and on the basis of this determination, the bingo cell to be activated next is displayed so that the game player can identify the bingo cell. The display of the bingo cell to be

activated next can be carried out by any one of the following two methods. One method is a method of individually displaying each bingo cell which would establish a bingo winning combination or poker winning combination if the bingo cell is activated next (hereinafter referred to as "REACH state individual display"), and the other method is a method of collectively displaying bingo cells each of which should be activated next to establish a bingo winning combination or poker winning combination (hereinafter referred to as "all REACH state display"). The REACH state indicates a state where if a specific bingo cell is activated next, a bingo winning combination or poker winning combination would be established.

In the REACH state individual display and the all REACH state display, a REACH state after bingo cells are shifted can be displayed in connection with the shift of the bingo cells, that is, every time the bingo cells are shifted.

According to the REACH state individual display, for example, when a bingo cell on which the king of hearts is disposed is activated in Fig. 31, a three-card hand serving as a winning combination is established, and three bingo cells as a bingo winning combination are aligned. Therefore, this state is informed to the game player by flashing the bingo cell on which the king of hearts is disposed. Furthermore, as described later, when there exist a plurality of bingo cells each of which would establish a poker winning combination and/or a bingo winning combination if it is activated, the flashing display of the bingo cells is carried out while successively switching the bingo cells to one another. Therefore, the game player can identify which bingo cell should be activated to establish a poker winning combination and/or a bingo winning combination.

According to the all REACH state display, when bingo cells on which the king of hearts, the ace of spades, the king of spades and the jack of clubs

are arranged are activated in Fig. 31, a poker winning combination and/or a bingo winning combination is established. Therefore, these bingo cells are displayed at the all-REACH state display portion 483 in a lump to inform this state to the game player. In Fig. 31, a flash display 485 indicates where bingo
5 cells which would establish poker winning combinations and/or bingo winning combinations when they are activated are located on the overall bingo card. The flashing display 485 indicates only the positions of the bingo cells establishing the poker winning combinations and/or the bingo winning combinations in the bingo card when they are activated, and it does not
10 represent the trump figures arranged on the bingo cells. However, the present invention is not limited to this, and the figures of trump figures may be represented.

Since the trump figures are used as identification information in the bingo game (particularly the numerals of the trump cards are used as first
15 identification information, and the suits of the trump cards are used as second identification information), both the bingo winning combination and the poker winning combination can be established, the number of REACH-state patterns is increased, and thus it is difficult to identify each REACH-state pattern. Furthermore, since the bingo cells can be moved, the REACH-state is variously
20 changed according to the movement of the cells. Therefore, it is difficult for game players to quickly identify which REACH state occurs. However, by using the two REACH-state display methods as described above, the game players can easily and accurately grasp which bingo cell should be activated to expect establishment of a poker winning combination and/or a bingo winning
25 combination in the bingo game. Therefore, the game players sense of anticipation is aroused and this enables to play games without anxiety while maintaining their enjoyment to the games.

[Transition of Screen of Reach-state Individual Display of Gaming Terminal]

The transmission of the screen of the REACH-state individual display which is displayed on the display device 370A of the gaming terminal 314 will be described with reference to Figs. 32A to 32D.

5 As described with respect to the REACH-state individual display, when the bingo cells on which the king of hearts, the ace of spades, the king of spades and the jack of clubs are arranged are activated, a poker winning combination and/or a bingo winning combination is established in Fig. 31. Figs. 32A to 32D show the same situation as Fig. 31, and the aspect that the bingo
10 cells on which the king of hearts, the ace of spades, the king of spades and the jack of clubs are arranged are individually flashed is shown in the order of events with respect to Figs. 32A to 32D.

In Fig. 32A, if the king of hearts is activated, a three-card hand serving as a poker winning combination is established and three activated bingo cells
15 are aligned as a bingo winning combination. Therefore, the bingo cell on which the king of hearts is disposed is displayed while flashed like the flashing display 486. When the flashing display is carried out for a predetermined period of time, the display state is shifted to the next state of Fig. 32B.

In Fig. 32B, when the ace of spades is activated, a straight as a poker
20 winning combination is established, and five activated bingo cells are aligned as a bingo winning combination. Therefore, the bingo cell on which the ace of spades is displayed while flashed like the flashing display 487. When this flashing display is carried out for a predetermined period of time, the state is shifted to the next state of Fig. 32C.

25 In Fig. 32C, when the king of spades is activated, a three-card hand as a poker winning combination is established, and three activated bingo cells as a bingo winning combination are aligned. Therefore, the bingo cell on which the

king of spades is disposed is displayed while flashed like the flashing display 488. When this flashing display is carried out for a predetermined period of time, the state is shifted to the next state of Fig. 32D.

5 In Fig. 32D, when the jack of clubs is activated, a four-card hand serving as a poker winning combination is established, and four activated bingo cells a bingo winning combination are aligned. Therefore, the bingo cell on which the jack of clubs is disposed is displayed while flashed like the flashing display 489. When this flashing display is carried out for a predetermined period of time, the state is shifted to the state of Fig. 32A again.

10 As described above, each of the flashing display 486 of Fig. 32A, the flashing display 487 of Fig. 32B, the flashing display 488 of Fig. 32C and the flashing display of Fig. 32D is successively and repetitively carried out for a predetermined period of time in this order as if the transition of the flashing display is carried out. Accordingly, it can be easily and accurately grasped
15 which bingo cell should be activated to expect establishment of a poker winning combination and/or a bingo winning combination, and thus a game player's sense of anticipation is aroused and carry out a game without anxiety.

The repetitive flashing display of successively carrying out each of the flashing display 486 of Fig. 32A, the flashing display 487 of Fig. 32B, the
20 flashing display 488 of Fig. 32C and the flashing display 489 of Fig. 32D for the predetermined period of time so that the flashing display is transient may be carried out on the basis of the strength order of the bingo or poker winning combinations (for example, a winning combination providing a higher payout may be set as a stronger winning combination).

25 [Screen of Double Up Game of Gaming Terminal]

A double up game screen displayed on the display device 370A of the gaming terminal 314 will be described with reference to Fig. 33.

The double up game is a game in which when a game player is supplied with some payout, he/she bets the payout in the bingo game of the gaming machine 310. The figure of a dealer's trump card selected under the control of the gaming terminal 314 is compared with the figure of a trump card selected from a plurality of trump cards by a game player while the plurality of trump cards are put face down under the control of the gaming terminal 314, and a person who selects the stronger trump card wins the game. When the game player wins the game, the payout acquired by the game player is increased twice. When the dealer wins the game, all the payout acquired by the game player are confiscated.

For example, in Fig. 33, the figure of the trump card selected by the dealer is first shown, and the game player is allowed to select one of the four trump cards which are put face down under the control of the gaming terminal 314. When the game player selects one of the cards by touching the display of the desired trump card, the trump card thus selected is turned over to display the figure thereof, and the game result of the double up game is determined. When the game player wins the game, the game player selects whether he/she plays the double up game again.

In the bingo game of the gaming machine 310, when the game player is provided with some payout, the game player can select it by himself/herself whether he/she plays the double up game.

As described above, by providing a game increasing a payout acquired by a game player separately from the game which is the original purpose of the gaming machine 310, the game player finds significance in acquirement of a payout in the original purpose of the game and further wants to increase the payout thus acquired. Therefore, the game player may feel great enjoyment to play games in the gaming machine 310.

[Operation of Lottery Machine and Gaming Terminal]

The processing of the main control circuit 400 of the lottery machine 312 (see Fig. 27) and the main control circuit 500A of the gaming terminal 314 (see Fig. 28) will be described with reference to Figs. 34 and 35.

5 [Operation of Lottery Machine]

First, the processing of the main control circuit 400 of the lottery machine 312 will be described with reference to Fig. 34.

In step S100, game preparation processing is carried out. Specifically, a predetermined number of lottery balls carried out by the screw conveyor is
10 moved to the lottery ball holding unit 332. Furthermore, CPU 406 executes various kinds of processing such as the processing of tilting the cabinet 313 at a predetermined angle, etc. After this processing is completed, CPU 406 shifts the processing to step S101.

In step S101, CPU 406 of the lottery machine 312 determines whether
15 the lottery is started. CPU 406 determines whether a predetermined standby time elapses and the lottery start timing has arrived. If this determination is YES, CPU 406 shifts the processing to step S102. If the determination is NO, CPU 406 shifts the processing to step S103.

In step S102, CPU 406 of the lottery machine 312 transmits a lottery
20 start signal. CPU 406 transmits the lottery start signal to each of the gaming terminals 314A to 314J through the communication control circuits 414A to 414J. After this processing is completed, CPU 406 shifts the processing to step S104. The lottery start signal described above is received by the gaming terminal 314. In step S204 corresponding to the processing of the main control circuit 500A of
25 the gaming terminal 314 described later.

In step S103, CPU 406 of the lottery machine 312 digests the standby time. CPU 406 counts the time until the predetermined standby time elapses.

After this processing is completed, CPU 406 shifts the processing to step S101.

In step S104, CPU 406 of the lottery machine 312 digests BET operation accepting time. CPU 406 counts the time until the predetermined BET operation accepting time elapses. After this processing is completed, CPU
5 406 shifts the processing to step S105.

In the step S105, the rotation of the lottery boards is started. Under the control of the main control circuit 400 of the lottery machine 312, the load board rotating motors 335 and 337 are actuated, and the rotation of the face portions 338A and 339B is started. After this processing is completed, the
10 processing is shifted to step S106.

In step S106, the swinging motion of the cabinet is started. Under the control of the main control circuit 400 of the lottery machine 312, the swinging device 346 is started, and the swinging motion of the lottery machine 312 is started. After this processing is completed, the processing is shifted to step
15 S107.

In step S107, the processing of dropping one lottery ball is carried out. Under the control of the main control circuit 400 of the lottery machine 312, the rotator 328 (see Fig. 18) is controlled, and one lottery ball drops into the lottery ball receiving portion 334. After this processing is completed, the processing is
20 shifted to step S108.

In step S108, the processing of obtaining identification information is carried out. In this processing, under the control of the main control circuit 400 of the lottery machine 312, one of the ball entrance detecting sensors 349 which are provided to the plurality of lottery holes 340 respectively detects entrance of
25 a lottery ball, and CPU 406 of the lottery machine 312 obtains identification information corresponding to the lottery hole. After this processing is completed, CPU 406 shifts the processing to step S109.

In step S109, CPU 406 of the lottery machine 312 transmits the Identification Information acquired in step S108 and information indicating how many times the lottery has been totally carried out if the present lottery is carried out (hereinafter referred to as "lottery number information"). CPU 406
5 transmits to each of the gaming terminals 314A to 314J the Identification information and the lottery number information representing how many times the lottery has been carried out until the present lottery. After this processing is completed, CPU 406 shifts the processing to step S110. The lottery number information is counted by CPU 406, and stored in RAM 410 (see Fig. 27).
10 Furthermore, the identification information and the lottery number information are received by the gaming terminal 314 in step S214 corresponding to the processing of the main control circuit 500A of the gaming terminal 314 described later.

In step S110, CPU 406 of the lottery machine 312 determines whether
15 the lottery has been carried out at a predetermined number of times. CPU 406 refers to the lottery number information and determines whether the number of lotteries having been executed reaches a predetermined number of times. If this determination is YES, CPU 406 shifts the processing to step S112. If this determination is NO, CPU 406 shifts the processing to step S107, CPU 406
20 returns the processing to step S107.

In step S112, the swinging motion of the cabinet is finished. Under the control of the main control circuit 400 of the lottery machine 312, the swinging device 346 is stopped, and the swinging operation of the cabinet by the lottery machine 312 is finished. After this processing is completed, CPU 406 shifts
25 the processing to step S113.

In step S113, the rotation of the lottery boards is finished. Under the control of the main control circuit 400 of the lottery machine 312, the lottery

board rotating motors 335 and 337 are stopped, and the rotation of the lottery boards 338 and 339 are finished. After this processing is completed, CPU 408 shifts the processing to step S100.

[Operation of Gaming Terminal]

5 Next, the processing of the main control circuit of the gaming terminal 314 (see Fig. 28) will be described with reference to Figs. 34 and 35.

10 In step S201, the gaming terminal 314 is initialized. CPU 506A (see Fig. 28) of the gaming terminal 314 carries out the processing of clearing various kinds of variables disposed in RAM 510A (see Fig. 28), initializing the display of the display device 370A, etc. After this processing is completed, CPU 506A shifts the processing to step S202.

 In step S202, a demonstration screen is displayed. After this processing is completed, the processing is shifted to step S203.

15 In step S203, the processing of detecting the game entry operation is carried out. In this processing, a game player makes a game entry. The touch operation of the display device 370A (or the manipulation of the dials 376A and 377A) is detected by the touch sensor 372A (or the main control circuit 500A itself) under the control of the main control circuit 500A of the gaming terminal 314. After this processing is completed, the processing is shifted to step S204.

20 In step S204, the reception processing of the lottery start signal is carried out. CPU 506A of the gaming terminal 314 receives the lottery start signal transmitted through the processing of the step S102 by the lottery machine 312 through the communication control circuit 514A by the main control circuit 500A of the gaming terminal 314 (see Fig. 28). After this processing is completed, the processing is shifted to step S209.

 In step S209, the processing of creating and displaying a bingo card is

carried out. CPU 506A of the gaming terminal 314 selects a predetermined number (for example, twenty-five) display data from display data for displaying identification information (for example, figures of trump cards or the like), and arranges and displays the display data thus selected in a matrix form on the display device 370A. After this processing is completed, the processing is shifted to step S210.

In step S210, bingo cell moving operating activating processing is carried out. In this processing, CPU 506A of the gaming terminal 314 turns on a bingo cell moving operation activation flag disposed in RAM 510A (see Fig. 28), whereby the manipulation of the dials 376A and 377A for moving the bingo cells is activated in the gaming terminal 314. The operation of the dials 376A and 377A for moving the bingo cells is valid insofar as the bingo cell moving operation activation flag is turned on. After this processing is completed, the processing is shifted to step S211.

In step S211, the BET operation acceptance is made. In this processing, CPU 506A of the gaming terminal 314 processes information which is associated with the BET operation carried out through the game player's touch to the display device 370A and detected by the touch sensor 372A under the control of the main control circuit 500A of the gaming terminal 314, and stores the BET information into RAM 510A (see Fig. 28). After this processing is completed, the processing is shifted to step S212.

In step S212, the number of payouts is determined according to the BET number. In this processing, CPU 506A of the gaming terminal 314 determines the number of payouts in the game on the basis of the BET information stored in RAM 510A (see Fig. 28) in step S211. CPU 506A stores the determination result in RAM 510A (see Fig. 28), and displays it at a predetermined portion of the display device 370A. After this processing is

completed, the processing is shifted to step S213.

In step S213, it is determined whether the BET acceptance time is finished. CPU 506A of the gaming terminal 314 counts a time after the processing of the step S209 is carried out, and determines whether the count
5 time reaches a predetermined period of time. If this determination is YES, the processing is shifted to step S214 of Fig. 35. If this determination is NO, the processing is returned to step S211.

In step S214, the identification information and the lottery number information (representing how many times the lottery has been totally carried
10 out if the present lottery is carried out) which are transmitted through the processing of the step S109 by the lottery machine 312 and acquired in step S108 by CPU 406 (see Fig. 34) are received in step S214. Under the control of the main control circuit 500A (see Fig. 28) of the gaming terminal 314, the above information is received through the communication control circuit 514A.
15 CPU 506A of the gaming terminal 314 stores the above identification and lottery number information into RAM 510A (see Fig. 28). After this processing is completed, the processing is shifted to step S215.

In step S215, bingo cell moving operation invalidating processing is carried out. The details of this processing will be described in the detailed
20 description of the bingo cell moving operation invalidating processing. After this processing is completed, the processing is shifted to step S215.

In step S216, it is searched whether the identification information received in step S214 exists on the bingo card. If the identification information exists on the bingo card, the bingo cell is activated. In this processing, it is
25 searched whether the identification information received in step S214 exists on the bingo card created in step S209 and displayed on the display device 370A. If there is any incident identification information, a activating flag which

corresponds to the bingo cell having the identification information thereon and disposed in RAM 510A (see Fig. 28) is turned on. Furthermore, the bingo cell on the display device 370A is displayed relatively brightly or displayed while the hatching display thereof is released, so that the bingo cell is displayed so as to be distinguishable from the other bingo cells. After this processing is completed, the processing is shifted to step S217.

In step S217, prize-winning determination processing is carried out. The details of this processing will be described in the detailed description of the prize-winning determination processing described later. After this processing is completed, the processing is shifted to step S218.

In step S218, the prize-winning determination is carried out. CPU 506A of the gaming terminal 314 refers to the determination result of the step S217 to make a determination as to prize-winning. If this determination is YES, CPU 506A shifts the processing to step S219. If the determination is NO, CPU 506A shifts the processing to step S225.

In step S219, it is determined whether the double up game is carried out. CPU 506A of the gaming terminal 314 determines whether the touch sensor 372A detects the operation of a predetermined touch portion displayed on the display device 370A by the game player to play the double up game under the control of the main control circuit 500A of the gaming terminal 370A. If this determination is YES, the processing is shifted to step S220. If this determination is NO, the processing is shifted to step S223.

In step S220, the double up game is carried out. This processing is carried out under the control of the main control circuit 500A of the gaming terminal 314, and the processing content is as described with reference to the double up game screen of the gaming terminal described above. After this processing is completed, the processing is shifted to step S221.

In step S221, it is determined whether the game player wins. Under the control of the main control circuit 500A of the gaming terminal 314, the game result is determined as described with reference to the double up game screen of the gaming terminal described above, and it is determined whether the game player wins the game. If this determination is YES, the processing is shifted to step S222. If the determination is NO, the processing is shifted to step S224.

In step S222, the processing of doubling the payout of the game player is carried out. CPU 506A of the gaming terminal 314 refers to the information on the number of payouts which are acquired by the game player and stored in RAM 510A (see Fig. 28), doubles this number of payouts and then renews the original information. After this processing is completed, the processing is shifted to step S219.

In step S223, the payout pay-out processing is carried out. CPU 506A of the gaming terminal 314 refers to the information on the number of payouts which are acquired by the game player and stored in RAM 510A (see Fig. 28), and under the control of the main control circuit 500A, the hopper 588A pays out medals (payouts) whose number corresponds to the information on the number of payouts acquired by the game player described above. After this processing is completed, the processing is shifted to step S201.

In step S224, the processing of setting the number of payouts acquired by the game player to zero is carried out. CPU 506A of the gaming terminal 314 refers to the information on the number of payouts which are acquired by the game player and stored in RAM 510A (see Fig. 28), and sets this information to zero to renew the original information. After this processing is completed, the processing is shifted to step S201.

In step S225, REACH determination processing is carried out. The

details of this processing will be described in the detailed description of the REACH determination processing described later. After this processing is completed, the processing is shifted to step S226.

5 In step S226, it is determined whether the present state is a REACH state. CPU 506A of the gaming terminal 314 determines on the basis of the REACH determination result of the step S225 whether the present state of the bingo card reaches a REACH state in which some bingo cells of the bingo card displayed on the display device 370A are activated and a bingo winning combination and/or a poker winning combination would be established if the last
10 one bingo cell is activated. If this determination is YES, the processing is shifted to step S227. If this determination is NO, the processing is shifted to step S228.

In step S227, a REACH cell (figure) informing start processing is carried out. The details of this processing will be described in the detailed description of the REACH cell (figure) informing start processing described later. After this
15 processing is completed, the processing is shifted to step S228.

In step S228, it is determined whether the reception of identification information has been carried out for a predetermined number of times. In step S214, the lottery number information stored in RAM 510A (see Fig. 28) is referred to in step S214, and it is determined on the basis of this information
20 whether the reception of identification information has been carried out for the predetermined number of times. If this determination is YES, the processing is shifted to step S201. If the determination is NO, the processing is shifted to step S214.

[Details of Bingo Cell Moving Operation Invalidating Processing]

25 The bingo cell moving operation invalidating processing will be described in detail with reference to Fig. 36.

In step S241, it is determined whether the lottery number information

received in step S214 of Fig. 35 reaches the predetermined number of times. CPU 506A of the gaming terminal determines the above information to determine whether the lottery number information reaches the predetermined number of times (for example, three times or other numbers of times). If this
5 determination is YES, the processing is shifted to step S242. If the determination is NO, this routine is immediately finished, and the processing is shifted to step S216 of Fig. 35.

In step S242, an advance notice of the bingo cell moving operation invalidation is notified. A predetermined notification for making a notice to
10 prohibit the processing of accepting the manipulation of the dials 376A and 377A to move the bingo cells is displayed on the display device 370A by the main control circuit 500A of the gaming terminal 314. After this processing is completed, the processing is shifted to step S243.

In step S243, the processing of digesting a predetermined period of
15 time is carried out. In this processing, CPU 506A of the gaming terminal 314 counts the time after the processing of step S242 is carried out, and prevents the processing from advancing to the next step until a predetermined period of time elapses. After this processing is completed, the processing is shifted to step S244.

20 In step S244, the bingo cell moving operation invalidating processing is carried out. In this processing, CPU 506 of the gaming terminal 314 turns off the dial operation activation flag disposed in RAM 510A (see Fig. 28) to invalidate the manipulation of the dials 376A and 377A for moving the bingo cells in the gaming terminal 314. After this processing is completed, this
25 subroutine is finished, and the processing is shifted to step S216 of Fig. 35.

[Details of Prize-Winning Determination Processing]

The prize-winning determination processing will be described in detail

with reference to Fig. 37.

In step S231, it is determined whether a bingo winning combination is established. In this processing, CPU 506A of the gaming terminal 314 determines the combination of the identification information which is stored in
5 RAM 510A (see Fig. 28) and constitutes the bingo card displayed on the display device 370A, the information on the position of each bingo cell on which the identification information is disposed and the invalidation flag corresponding to the identification information, and determines whether a bingo winning combination is established on a specific line of the bingo card. If this
10 determination is YES, the processing is shifted to step S232. If this determination is NO, the processing is shifted to step S233.

In step S232, a bingo winning combination establishing flag is turned on, information on all the established bingo winning combinations and the bingo cells constituting the bingo winning combinations are stored in the RAM, and
15 also the corresponding number of payouts is stored in the RAM. CPU 506A turns on the bingo winning combination establishing flag disposed in RAM 510A (see Fig. 28). Furthermore, the information on all the established bingo winning combinations and the bingo cells constituting the bingo winning combinations is stored in RAM 510A. The number of payouts corresponding to
20 all the established bingo winning combinations is determined, and the determination result is stored in RAM 510A. After this processing is completed, the processing is shifted to step S233.

In step S233, it is determined whether a poker winning combination is established. In this processing, CPU 506A of the gaming terminal 314 has
25 determined the combination of the identification information which is stored in RAM 510A (see Fig. 28) and constitutes the bingo card displayed on the display device 370A, the information on the position of the bingo cells on which the

Identification Information is disposed, and the activating flag corresponding to the identification information, and it is determined whether a poker winning combination is established on a specific line of the bingo card. If this determination is YES, the processing is shifted to step S234. If the
5 determination is NO, this subroutine is completed, and the processing is shifted to step S218 of Fig 35.

In step S234, a poker winning combination establishing flag is turned on, and the information on all the established poker winning combinations and the bingo cells constituting the poker winning combinations is stored in the RAM,
10 and the corresponding number of payouts is stored in the RAM. CPU 508A of the gaming terminal 314 turns on the poker winning combination establishing flag disposed in RAM 510A (see Fig. 28). The information on all the established poker winning combinations and the bingo cells thereof is stored in RAM 510A. Then, the number of payouts corresponding to all the established
15 poker winning combinations is determined, and the determination result is stored in RAM 510A. After this processing is completed, this subroutine is finished, and the processing is shifted to step S218 of Fig. 35.

As described above, the prize-winning determination processing is carried out on both the establishment of the bingo winning combination and the
20 establishment of the poker winning combination independently of each other. Therefore, it is possible to establish both a bingo winning combination and a poker winning combination on the specific same line of the bingo card at the same time. A payout is given to each of the bingo winning combination and the poker winning combination which are simultaneously established on the
25 specific same line of the bingo card. That is, the payout to the bingo winning combination and the payout to the poker winning combination are summed and given to the game player. Accordingly, there is a case where a game player

greatly feels the sense of anticipation to the probability that winning combinations providing many payouts are established on a specific line. In this embodiment, both the bingo winning combination and the poker winning combination can be simultaneously established on the specific same line of the bingo card. However, the present invention is not limited to this, and it may be determined that only the bingo winning combination is established or it may be determined that only the poker winning combination is established. At this time, the game player is supplied with only the payout corresponding to the bingo winning combination or the payout corresponding to the poker winning combination.

[Details of Reach Determination Processing]

Details of the REACH determination processing will be described with reference to Fig. 38.

In step S251, the specific bingo cells are activated, whereby it is determined whether a bingo winning combination is established. In this processing, CPU 506A of the gaming terminal 314 determines the combination of the Identification Information which is stored in RAM 510A (see Fig. 28) and constitutes the bingo card displayed on the display device 370A, the information on the position of the bingo cell on which the identification information is disposed, and the activating flag corresponding to the identification information, and determines whether there is such a situation that a bingo winning combination would be established on a specific line of the bingo card if a specific bingo cell is activated. If this determination is YES, the processing is shifted to step S252. If the determination is NO, the processing is shifted to step S253.

In step S252, the bingo winning combination REACH state flag is turned on, and the information of all the REACH cells for the bingo winning

combinations is stored in RAM 510A. The REACH cell (figure) means the last bingo cell (figure) under the condition where if the last bingo cell is activated, a bingo winning combination would be established on a specific line of the bingo card. CPU 506A of the gaming terminal 314 turns on the bingo winning combination REACH state flag disposed in RAM 510A (see Fig. 28).
5 Furthermore, it stores the information on all the read-to-win bingo cells for the bingo winning combinations into RAM 510A. After this processing is completed, the processing is shifted to step S253.

In step S253, it is determined whether a poker winning combination
10 would be established if a specific bingo cell is activated. In this processing, CPU 506A of the gaming terminal 314 determines the identification information stored in RAM 510A (see Fig. 28) and constituting the bingo card displayed on the display device 370A, the information on the position of the bingo cell on which the identification information is disposed, and the activating flag
15 corresponding to the identification information, and determines whether a poker winning combination would be established on a specific line of the bingo card if a specific bingo cell is activated. If this determination is YES, the processing is shifted to step S254. If the determination is NO, this subroutine is finished, and the processing is shifted to step S226 of Fig. 35.

20 In step S254, the poker winning combination REACH state flag is turned on, and the information of all the REACH cells based on poker winning combinations is stored in RAM. CPU 506A of the gaming terminal 314 turns on the poker winning combination REACH state flag disposed in RAM 510A (see Fig. 28). Furthermore, it stores the information of all the read-to-win bingo
25 cells for the poker winning combinations into RAM 510A. After this processing is completed, this subroutine is finished, and this processing is shifted to step S226 of Fig. 35.

[Details of Reach Cell Informing Start Processing]

The details of the REACH cell informing start processing will be described with reference to Fig. 39.

In step S261, It is determined whether any REACH cell exists. CPU
5 506A of the gaming terminal 314 determines whether at least one of the bingo winning combination REACH state flag and the poker winning combination REACH state flag stored in RAM 510A (see Fig. 28) in the step S252 and/or the step S254 is turned on. If this determination is YES, the processing is started to step S262. If the determination is NO, this subroutine is immediately
10 finished, and the processing is shifted to step S228 of Fig. 35.

In step S262, the processing of starting to display all the REACH cells all at once on the all-REACH-state display portion so that these read-to-win cells are identifiable is carried out. The display control device 600A is driven under the control of the main control circuit 500A (see Fig. 28) of the gaming
15 terminal 314 to start all the REACH cells stored in RAM 510A (see Fig. 28) in the step S252 and/or the step S254 of Fig. 38 on the all-REACH-state display portion 483 displayed on the display device 370A. After this processing is completed, the processing is shifted to step S263.

In step S263 is carried out the processing of starting to successively
20 and repetitively display each of all the REACH cells in turns so that these REACH cells are individually identifiable. The display control device 600A is driven under the control of the main control circuit 500A (see Fig. 28) of the gaming terminal 314 to start the processing of starting to successively and repetitively display each of all the REACH cells stored in RAM 510A (see Fig.
25 28) in the step S252 and/or the step S254 of Fig. 38 in turns on the bingo card displayed on the display device 370A so that the REACH cells are individually identifiable. The display condition is described in the description of the

transition of the REACH state individual display screen of the gaming terminal described above. The display of the REACH cell informing screen started in step S262 and step S263 is continued until the step S201 of Fig. 34 is executed and the gaming terminal 314 is initialized. After this processing is completed, 5 this subroutine is finished, and the processing is shifted to step S228 of Fig. 35.

By executing the step S263 in the REACH cell informing start processing of Fig. 39, the gaming terminal 314 is allowed to repetitively display all the REACH cells in turns on the display device 370A so that the REACH cells are identifiable. That is, in a gaming machine equipped with display 10 means for displaying a bingo card comprising a plurality of bingo cells arranged in a matrix form, identification information display data storing means for storing display data to display identification information comprising a combination of different identification information, bingo card identification information determination means for selecting bingo card identification information from the 15 identification information to determine the bingo card identification information to be associated with the plurality of bingo cells, lottery means for selecting the identification information by lottery, activating means for comparing the identification information selected by the lottery means with the bingo card identification information and activating the bingo cell corresponding to bingo 20 card identification information when the identification information is coincident with the bingo card identification information, and winning combination determination means for determining whether a combination of bingo cells activated by the activating means and a specific non-activated bingo cell forms a predetermined bingo winning combination or whether a combination of the 25 bingo card identification information corresponding to the bingo cells activated by the activating means and the bingo card identification information corresponding to a non-activated specific bingo cell forms a predetermined

winning combination different from the predetermined bingo winning combination, the REACH cell informing start processing, particularly the step S263 is an example of a REACH informing method of successively and individually displaying the non-activated specific bingo cells.

5 In step S100 of Fig. 34, the game preparation processing executed by CPU 406 will be described with reference to Fig. 40.

 In step S301, CPU 406 supplies a driving signal to the shutter 347 to execute the processing of setting the shutter 347 to an open state. The shutter 347 is set in a close state after a predetermined period of time elapses. In
10 order to prepare for the next game, CPU 406 executes the initialization processing of the information on the preparation. The information on the preparation is located in RAM 510A or the like. After this processing is completed, the processing is shifted to step S302.

 In step S302, CPU 406 supplies a driving signal to the lottery ball
15 raising motor 320C to execute the driving start processing of the lottery ball raising motor 320C. After this processing is completed, the processing is shifted to step S303.

 In step S303, CPU 406 determines whether a predetermined period of time elapses. Here, the predetermined period of time is a sufficient time
20 needed until a lottery ball drops from the lottery hole 340 and 341 to the withdrawing unit 344 and reaches the second withdrawing passage 350. In this processing, when determining that the predetermined period of time elapses, CPU 406 shifts the processing to step S304. If it is not determined that the predetermined period of time elapses, CPU 406 shifts the processing to
25 step S303 again. Accordingly, CPU 406 executes the processing of the step S304 and subsequent processing thereto only when a sufficient time elapses until lottery balls drop from lottery holes 340 and 341 to the withdrawing unit 344

and reach the second withdrawing passage 350.

In step S304, CPU 406 supplies the swinging device 346 with a signal for tilting the cabinet 313 at a predetermined angle. This predetermined angle is set to an angle at which the stern 312B side is lower than the stern 312A side.

- 5 Accordingly, the swinging device 346 tilts the cabinet 313 so that the stern 312B side is lower than the stern 312A. Subsequently, CPU 406 supplies the open/close gate 352 with a signal indicating the opening state (step S305). The open/close gate 352 receives the signal indicating the opening state, and sets itself to the open state. Accordingly, the stern 312B side is lower than the
- 10 stern 312A and also the open/close gate 352 is set in the open state, so that lottery balls located in the second withdrawing passage 350 are rolled to the lower side of the spiral member 320. Under the control described above, the lottery balls can be withdrawn by merely tilting the cabinet, and the gaming machine can be manufactured simply at a low cost. After this processing is
- 15 completed, the processing is shifted to step S306.

- In step S306, CPU 406 determines on the basis of a predetermined signal supplied from the lottery ball passage detecting sensor 351 whether a predetermined number of lottery balls pass through the open/close gate 352. If it is determined that the predetermined number of lottery balls pass through the
- 20 open/close gate 352, CPU 406 supplies the open/close gate 352 with a signal indicating a close state (step S307). The open/close gate 352 receives the signal indicating the close state, and sets itself to the close state. On the other hand, if it is determined that the predetermined number of lottery balls do not pass through the open/close gate 352, CPU 406 shifts the processing to the
- 25 step S306 again. Accordingly, the lottery balls guided to the lower end of the spiral member 320A are prevented from returning back to the second withdrawing passage 350, and also lottery balls held in the second withdrawing

passage 350 are prevented from being guided to the lower end of the spiral member 320A. Under the control described above, the lottery balls can be withdrawn by merely tilting the cabinet, and the gaming machine can be manufactured simply at a low cost. After this processing is completed, the
5 processing is shifted to step S308.

In step S308, CPU 406 determines whether a predetermined period of time elapses. Here, the predetermined period of time is a sufficient time to allow the cabinet 313 to tilt at a predetermined angle, the open/close gate 352 is set in the open state, a predetermined number of lottery balls located in the
10 second withdrawing passage 350 are guided to the lower side of the spiral member 320A and these balls are allowed to be carried by the screw conveyor 320. In this processing, if it is determined that the predetermined period of time elapses, CPU 406 shifts the processing to step S308. If it is not determined that the predetermined period of time elapses, CPU 406 shifts the
15 processing to step S309. Accordingly, CPU 406 executes the processing of the step S304 and the subsequent steps thereto only when a sufficient time elapses until lottery balls drop from the hole 340 and 341 to the withdrawing unit 344 and reach the second withdrawing passage 350.

In step S309, CPU 406 supplies the swinging device 346 with a signal
20 for tilting the cabinet 313 at a predetermined angle, and executes the cabinet tilting stop control processing. The predetermined angle is an angle at which the stern 312B side and the stern 312A side are horizontal to each other. Accordingly, the swinging device 346 controls to stop the tilt of the cabinet 313 so that the stern 312B side and the stern 312A side are horizontal to each other.
25 Subsequently, CPU 406 supplies a stop signal to the lottery ball raising motor 320C, and executes the driving completion processing of the lottery ball raising motor 320C (step S310). After this processing is completed, this subroutine is

finished.

In this embodiment, CPU 406 executing the step S108, etc., of Fig. 34 and CPU 506A executing the steps S217, etc., of Fig. 35, etc., correspond to an example of the game result determination means. The screw conveyor 320, the rotator 328, the slopes 336A and 336B, etc., correspond to an example of the lottery ball throwing means. The rotator 328, the slopes 336A and 336B, etc., correspond to an example of the throw-in means. The screw conveyor 320, etc., correspond to an example of the feeding means. The lottery ball passage sensor 351, etc., correspond to examples of the detecting means and the passage detecting means. CPU 406 executing the steps S304, the step S309 of FIG. 40, etc., corresponds to an example of the tilt control means. The shutter 347, etc., correspond to an example of the lottery ball discharging means.

[Modification]

In this embodiment, in step S100 of Fig. 34, CPU 406 executes the game preparation processing, and after the processing is completed, the processing of step S101 is executed. However, another style may be used. For example, in the step S100 of Fig. 34, CPU 406 executes game preparation processing similar to the above game preparation processing, the game preparation processing is executed under a background, and the processing of the step S101 is executed. In this case, the game preparation processing called in step S100 and the processing subsequent to the step S101 may be executed in parallel by CPU 406.

In this embodiment, the two lottery boards 338 and 339 are disposed, however, another style may be used. For example, a plurality of lottery boards may be disposed. Furthermore, in this embodiment, identification information having spades and hearts as the first symbols is allocated to the lottery holes

340 of the lottery board 338, and identification information having clubs and diamonds as the first symbols is allocated to the lottery holes 341 of the lottery board 339. However, another style may be used. For example, the same type of second symbols may be allocated to some of the plurality of lottery boards. Furthermore, even when the identification information comprising the first symbols is allocated, the same type of identification information like odd or even numbers may be allocated to some of the plurality of lottery boards. Of course, identification information which does not comprise two symbols, but comprises a plurality of symbols may be allocated. In this case, identification information in which one or more symbols of the plurality of symbols are of the same type may be allocated to some of the plurality of boards.

According to the gaming machine of this embodiment, a plurality of holes through which balls can penetrate are formed at the portion corresponding to the deck board of the lottery machine in the form of a ship, the figure of a trump card allocated to a hole which a ball enters according to the swinging motion of the ship is recognized, and when the same figure thus recognized exists in the figures of the trump cards displayed on a bingo card, the corresponding bingo cell is activated. As a result, a predetermined payout is given not only when a normal bingo winning combination is established on a specific line of the bingo card by the bingo cell thus activated, but also when a poker winning combination of trump cards different from the bingo winning combination is also established by the bingo cell thus activated. However, the present invention is not limited to this mode. For example, the present invention may be applied to a so-called "Keno (Kino) game" in which a lottery is carried out in the same method under the state where numerals are associated with holes, and more or less of a payout is determined on the basis of how many numerals are selected from a predetermined number of numerals

selected in advance by a game player. That is, the lottery machine 312 of this embodiment may be applied to any game which selects identification information by lottery.

The embodiments of the present invention have been described above.

- 5 However, the above embodiments are merely specific examples, and do not limit the present invention. That is, the present invention mainly relates to a gaming machine characterized by comprising: a cabinet having a face portion on which a lottery ball can be rolled, and a plurality of lottery holes provided on the face portion; game result determination means for determining a game
- 10 result under the condition where a lottery ball enters any one of a plurality of lottery holes of the cabinet; a withdrawing passage which is provided in the cabinet and through which lottery balls discharged from the a plurality of lottery holes can be passed; lottery ball throwing means for allowing the lottery balls discharged from the a plurality of lottery holes through the withdrawing passage
- 15 onto the face portion of the cabinet; and tilt control means for tilting the cabinet, wherein the cabinet is tilted by the tilt control means and lottery balls located in the withdrawing passage are led out to the lottery ball throwing means. However, the specific constructions of the cabinet, the game result determination means, the lottery ball throwing means, the tilt control means, etc.,
- 20 may be suitably altered in design.

The effects described with reference to the embodiments of the present invention are merely preferable ones of effects acquired by the present invention, and the effects of the present invention are not limited to the effects described with reference to the embodiments of the present invention.

- 25 According to the present invention, the cabinet is tilted, and lottery balls located in the withdrawing passage are led out to the lottery ball throwing means. Therefore, the lottery balls can be withdrawn by merely tilting the

cabinet, and the gaming machine can be manufactured simply at low cost.